MONTHLY WEATHER REVIEW.

WILLIS L. MOORE, Chief U. S. Weather Bureau.

Vol. 41. JANUARY, 1913. No. 1.

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Price of a single copy, 35 cents; $4.00 per year. Foreign postage additional. District separates, 5 cents each.

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CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 1, NORTH ATLANTIC STATES.

Prof. WILFORD M. WILSON, District Editor.

GENERAL SUMMARY.

Not within the memory of living men has there been a January with appreciably milder weather than this year, though in 1880 and 1891 the average temperature for January at a few stations was slightly higher. On the other hand, in many instances the past month averaged warmer than any other January since the beginning of observations, more than 50 years ago. In the vicinity of Philadelphia, Pa., the month was the warmest January since 1790, 124 years for which records are available. In a measure, these conditions may be explained by the fact that a somewhat larger number of barometric depressions than usual passed down the St. Lawrence Valley during the month, causing a strong prevalence of southerly winds throughout the district. But, curiously enough, almost none of the storms of the month was followed by pronounced changes to colder, such as usually follows storms at this season, and as a rule there were only two or three days on which the temperatures averaged less than the normal.

Over a large part of the district the snowfall for the month was less than ever before recorded in January since the establishment of the Climatological Service. The deficiency in snowfall greatly interferred with lumbering operations in the northern sections, but the mild weather was favorable to nearly all other kinds of outdoor work throughout the district, and even permitted considerable plowing in the southern sections. Some potatoes were planted in the coast regions of Virginia.

Precipitation, as a rule, greatly exceeded the normal at the north and diminished to a little less than the January average at the south. In the destructiveness of its storms the month was not very unusual, though the disturbances of the 3d, 8th, and 12th were well developed and were attended by high wind velocities.

The following table exhibits the leading features of meteorological interest for the various sections of the district:

States or parts of States within district No. 1.	Temperature.				Precipitation.				Average number of—	
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Rainy days.	Clear days.
New England	32.1	+10.4	63	−30	3.30	−0.49	6.54	0.85	12	11
New York	33.4	+10.6	66	−10	4.01	+0.89	8.89	1.23	13	11
Pennsylvania	36.4	+ 9.2	65	7	3.86	+0.64	8.90	1.51	14	10
New Jersey	39.5	+ 9.3	68	10	3.58	−0.27	4.71	2.63	14	11
Maryland, Delaware, and District of Columbia	42.3	+ 9.7	74	15	3.02	+0.03	4.62	2.17	13	12
West Virginia	39.4	+ 8.1	69	9	2.82	−0.10	6.21	1.84	9	10
Virginia	43.5	+10.5	74	17	2.58	−0.06	3.92	1.49	10	11

TEMPERATURE.

In all parts of the district the average temperature was close to 10° above the normal and nearly 18° higher than for the same month last year. The period of abnormally warm weather began about the 26th of December and continued with only two brief interruptions throughout the month of January. At most stations the only dates on which the temperatures averaged less than the normal were the 9th and 13th. The minimum temperatures for the month occurred on one or the other of these dates in most sections, though in some instances they came on the 10th or 14th. The most remarkable weather of the month came on or about the 17th, on which date the average temperatures were generally about 20° or more above the normal. At Binghamton, N. Y., the temperature extremes on that day were 54° and 44°, averaging 26° higher than the normal and 1° higher than on the 31st of last August, when the temperature extremes were 57° and 40°. This remarkable comparison illustrates well the conditions that prevailed over a large part of the district.

Although the month as a whole was decidedly the warmest January since 1891 in all parts of the district, and about equal in mildness if not surpassing any January in the last hundred years in some sections, yet the highest maximum temperatures were in themselves not very unusual and have been exceeded several times in January in the last 25 years. In the New York section, for example, the highest temperature observed was 66°, whereas higher temperatures were recorded in January, 1890, 1892, 1906, and 1907, the highest being 72° in January, 1906.

So far as records have been examined, it appears that the minimum temperatures were much more remarkable, as in nearly all sections they were the highest recorded in any January since 1891. Temperatures of zero or below were not recorded at any station farther south than New Lisbon, N. Y., which is in nearly the same latitude as Albany. Zero temperatures were not recorded at any of the stations in Massachusetts, Rhode Island, or Connecticut, the minimum temperatures in those States averaging about 10°. South of Pennsylvania the temperature did not fall below 20° at most stations, and at a few places did not even reach 25°. In some cases the minimum temperatures for January last year were more than 40° lower than this year. In the mountainous parts of Virginia there were only about 12 days with temperatures below freezing, while in the coast regions of that State violets came into full bloom and conditions were generally typical of a spring month.

The mean temperatures for the month ranged from 49.5° at Eastville, Va., to 15.4° at Van Buren, a station in the extreme northern part of Maine.

PRECIPITATION.

The total precipitation for the month averaged somewhat more than 3 inches for the district as a whole, but at individual stations the amounts varied from less than 1 inch to nearly 9 inches. There was less than the normal amount at about four-sevenths of the stations in the district, but at most of these the deficiency was slight, and it is proper to say that the precipitation was generally sufficient for all needs. The greatest amount reported at any station was 8.90 inches at Clearfield, Pa. The total amount exceeded 6 inches at one station in New England, Somerset, Vt.; at 4 stations in New York; 4 in Pennsylvania; and 1 in West Virginia. The only stations in the district reporting less than 1 inch of precipitation during the month were Houlton, Me., and Durham, N. H.

Storms were more frequent than usual in January, there being an average of about 13 days with measurable amounts of precipitation for all stations in the district. There was very little precipitation in the form of snow except in a few of the mountainous sections, where somewhat more than 10 inches of snow fell within the month. However, the snowfall in those localities was much less than usually occurs in January. From the latitude of Boston southward few stations received more than 5 inches of snow, and at many there was none at all or only a trace. The average amount was less than 1 inch in New Jersey, Maryland, Delaware, and Virginia, and was only about 3 inches for the entire district. Bayard, W. Va., reported the greatest amount of snowfall for the month, 20.5 inches, of which 10 inches fell on the 4th.

The principal storm dates were the 3d, 8th, 12th, and 18th. High winds attended the storms of these dates, particularly that of the 3d, when a maximum velocity of 86 miles per hour was recorded at New York City. During this storm the winds attained destructive force from beyond the southern limits of the district as far north as Massachusetts. Press reports on the following day indicated that 3 lives had been lost and nearly 100 persons injured as a result of the storm, while the damage to property was estimated at more than $2,000.000. However, it is now believed that the storm was not much more destructive than some storms of the preceding winter. It is worthy of note that during this storm the barometer at Weather Bureau stations in most parts of the district fell to a much lower reading than had been observed for many years. At some stations the pressure reached the lowest record for 40 years.

RIVER CONDITIONS.

The most important fact regarding the rivers was the exceptional freedom from ice. Navigation was not interfered with except in the rivers of northern New England. Steamers plied the Connecticut River throughout the month.

The principal streams remained at moderate stages most of the month, but a sharp rise followed the rains of the 3d to 8th. Probably the most remarkable instance was at Williamsport, Pa., where the Susquehanna River rose from 2.9 feet on the 7th to 17.4 feet on the 9th. This was the highest stage reached during the month, but was 2.6 feet below the flood stage.

SUNSHINE.

There was somewhat more sunshine than usual in January, there being 10 to 12 clear days in most sections, and 6 to 8 partly cloudy days. The percentage of possible sunshine averaged 48, ranging from less than 40 in parts of Pennsylvania to nearly 60 in northern New Jersey and southern New England.

TABLE 1.—*Climatological data for January, 1913. District No. 1, North Atlantic States.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Maine.																				
Bar Harbor	Hancock	20	27	31.1	+ 9.5	56	18	0	9†	33	4.13	− 1.19	1.10	7.0	12	10	5	16	sw.	William Miller.
Cornish	York	778	58	30.2	+10.2	54	12	1	9	37	2.84	− 0.70	0.58	7.0	13	9	7	15	nw.	T. H. West.
Eastport	Washington	53	41	27.8	+ 7.7	52	3	− 2	13	33	4.01	+ 0.17	1.18	7.9	14	6	10	15	w.	U. S. Weather Bureau.
Fairfield	Somerset	90	28	26.2	+10.4	52	4	− 7	10	40	2.47	− 0.54	0.70	6.0	9	11	6	14	.....	E. F. Parker.
Farmington	Franklin	450	16	23.2	+ 8.1	48	3†	− 14	10	35	2.54	− 1.00	0.56	11.5	11	9	8	14	nw.	State Normal School.
Gardiner	Kennebec	163	21	29.2	+11.6	62	4	0	9†	50	2.97	− 0.77	0.58	1.5	14	12	2	17	se.	Samuel D. Soule.
Greenville	Piscataquis	1,140	9	20.4	.....	48	3†	− 15	13	39	2.15	− 0.51	0.50	12.5	11	.....	.....	.....	.....	U. S. Weather Bureau.
Houlton	Aroostook	362	11	21.4	.....	50	30	− 10	29	50	0.85	− 1.97	0.40	5.0	4	19	6	6	n.	Bangor & Aroostook R. R.
Lewiston	Androscoggin	185	39	27.7	+ 9.5	50	3	2	13	37	3.67	− 0.42	0.93	5.0	11	10	8	13	nw.	Union Water Power Co.
Madison	Somerset	257	10	22.8	.....	50	4	− 12	10†	45	3.36	− 0.41	0.56	9.2	11	17	0	14	e.	William Jardine.
Millinocket	Penobscot	386	10	21.6	.....	52	4	− 12	10	41	3.40	− 0.38	0.54	11.0	13	10	2	19	sw.	F. C. Bowler.
North Bridgton	Cumberland	450	20	28.2	+ 9.8	50	3	0	13†	35	3.23	− 0.47	0.88	9.5	9	9	10	12	sw.	G. E. Chadbourne.
Orono	Penobscot	129	44	27.0	+10.8	58	4	− 5	9†	44	2.80	− 1.29	0.70	1.2	8	5	8	18	sw.	Agricultural Exp. Station.
Patten	....do	550	11	.....	.....	.....	.....	.....	.....	.....	3.40	.....	1.00	14.0	7	12d	3d	12d	sw.	Bangor & Aroostook R. R.
Portland	Cumberland	99	42	31.6	+ 9.6	53	12	6	13	36	2.47	− 1.34	0.63	5.0	12	12	4	15	nw.	U. S. Weather Bureau.
Presque Isle	Aroostook	.....	4	18.3	.....	48	4	− 24	29	39	2.69	.....	0.53	7.9	10	11	5	15	w.	W. T. Faulkner.
Rumford Falls	Oxford	505	20	24.0	+ 7.5	50	3	− 8	10	32	2.38	− 0.80	0.64	12.2	11	13	6	12	nw.	Charles A. Mixer.
Van Buren	Aroostook	510	8	15.4	.....	44	18	− 30	29	47	2.83	.....	0.51	11.0	14	15	4	12	s.	J. M. Thomas.
Winslow	Kennebec	90	18	27.4	+ 9.6	54	4	− 5	13	36	2.62	− 0.70	0.65	6.0	10	11	5	15	sw.	Hollingsworth & Whitney Co.
New Hampshire.																				
Alstead Center	Cheshire	1,120	9	30.0	+11.0	52	3†	4	9	32	2.27	− 0.75	0.43	11.0	11	12	6	13	sw.	Frank Dewing.
Benton	Grafton	.....	4	25.7	.....	47	31	− 6	9	39	4.03	.....	1.09	14.0	15	10	7	14	nw.	State Sanatorium.
Bethlehem	....do	1,470	21	26.0	+10.6	56	3	− 9	9†	34	2.98	+ 0.65	0.63	5.5	13	11	6	14	w.	Benjamin Tucker.
Concord	Merrimack	350	53	31.1	+ 9.9	59	31	5	9	36	1.81	− 1.53	0.40	4.5	11	5	11	15	nw.	U. S. Weather Bureau.
Durham	Stafford	88	18	31.8	+ 9.1	57	12	5	9	43	0.86	− 3.02	0.37	4.5	5	11	3	17	sw.	Agricultural Exp. Station.
Franklin	Merrimack	440	14	29.4	.....	54	3†	1	10	35	3.00	.....	0.58	8.0	14	11	8	12	nw.	Dr. C. P. Webster.
Grafton	Grafton	863	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. R. Kimball.
Hanover	....do	603	79	28.2	+11.3	53	3	− 1	13	32	2.92	+ 0.27	0.50	2.8	13	5	11	15	s.	Dartmouth College.
Keene	Cheshire	506	28	31.4	+10.5	57	3	6	9	34	2.77	+ 0.06	0.53	5.0	12	14	6	11	sw.	Samuel Wadsworth.
Nashua	Hillsboro	125	28	34.5	+12.0	59	3†	10	9	32	2.03	− 2.02	0.72	5.2	12	.....	.....	.....	.....	Jackson Co.
Newton	Rockingham	.....	25	33.0	+10.0	59	31	3	10	37	2.10	− 1.60	0.46	4.0	9	9	15	7	sw.	W. C. Gale.
Plymouth	Grafton	500	25	26.0	+ 9.6	50	3	− 4	10	31	3.24	− 0.38	0.47	9.8	13	16	4	11	w.	Hattie G. Trow.
Vermont.																				
Bloomfield	Essex	.....	6	23.8	.....	54	4	− 17	13	44	3.19	.....	0.54	13.2	14	13	4	14	s.	Lyman Falls Power Co.
Cavendish	Windsor	910	10	28.8	.....	51	3	1	9	31	2.58	.....	0.55	6.5	9	11	5	15	w.	E. D. Kingsbury.
Chelsea	Orange	840	18	26.2	+11.2	52	3	− 3	9	35	3.26	+ 0.15	0.48	8.0	13	9	8	14	n.	W. F. Dewey.
Manchester	Bennington	980	14	32.4	.....	57	3	5	9	34	3.10	.....	0.93	3.5	9	2	13	16	sw.	N. M. Canfield.
Somerset	Windham	2,096	....	28.4	.....	51	21	− 3	29	33	6.54	.....	1.75	12.0	17	11	4	16	sw.	J. Albert Holmes.
St. Johnsbury	Caledonia	711	20	25.3	+10.4	55	4	− 10	10	36	3.25	+ 0.80	0.61	11.5	15	10	10	11	nw.	Fairbanks Museum.
Woodstock	Windsor	700	21	30.4	+15.0	51	3†	1	13	40	3.69	+ 0.72	0.93	10.5	11	6	4	21	.....	John S. Eaton.
Massachusetts.																				
Amherst	Hampshire	222	24	34.2	+10.6	60	3	11	9	35	3.98	+ 0.52	1.02	4.0	15	18	5	8	sw.	Agricultural Exp. Station.
Blue Hill	Norfolk	640	29	36.0	+11.0	60	6	8	9	30	3.21	− 1.07	1.14	2.3	15	8	8	15	sw.	Blue Hill Observatory.
Boston	Suffolk	124	43	39.3	+12.3	62	6	13	9	33	2.38	− 1.44	1.02	0.3	11	11	6	14	sw.	U. S. Weather Bureau.
Chestnut Hill	....do	124	33	38.0	+11.6	62	3	11	9	27	3.38	− 0.95	0.90	1.2	14	16	0	15	.....	Metropolitan Water Board.
Clinton	Worcester	370	17	34.6	.....	63	3	8	8	45	3.20	.....	1.23	2.5	14	.....	.....	.....	.....	Do.
Concord	Middlesex	139	23	35.0	+11.1	59	3†	10	9	33	2.57	− 0.77	1.15	3.8	10	11	8	12	sw.	Fred A. Tower.
Fall River	Bristol	200	47	38.0	+ 9.3	57	3†	12	9	33	4.49	− 0.08	1.20	0.5	14	7	18	6	sw.	C. V. S. Remington.
Fitchburg	Worcester	550	30	34.8	+11.2	59	31	7	9	33	2.52	− 1.60	0.76	5.0	12	14	4	13	w.	Dr. A. P. Mason.
Framingham	Middlesex	160	33	37.2	+11.5	59	6†	10	9	29	2.96	− 1.44	1.13	2.0	13	.....	.....	.....	.....	Metropolitan Water Board.
Hyannis **	Barnstable	31	22	38.6	.....	54	6†	15	9	24	5.49	+ 1.62	1.70	.....	13	12	7	12	nw.	C. F. Sleeper.
Lawrence	Essex	51	29	34.4	+10.6	58	31	7	9	32	2.34	− 1.77	0.73	4.5	11	8	19	4	nw.	Essex Co.
Lowell	Middlesex	100	28	36.2	+12.4	58	3†	9	9	30	2.73	− 1.40	0.98	.....	11	.....	.....	.....	.....	Props. Locks & Canals.
Middleboro	Plymouth	53	27	37.6	+10.9	59	6†	8	10	34	4.67	+ 0.27	1.35	T.	14	5	9	17	sw.	A. R. Gurney.
Nantucket	Nantucket	42	27	39.9	+ 7.8	55	12	19	9	27	5.57	+ 2.15	1.20	T.	18	7	9	15	sw.	U. S. Weather Bureau.
New Bedford	Bristol	88	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	City Engineer.
Norfolk	Norfolk	244	10	35.5	.....	62	6	5	14	34	3.36	.....	1.56	1.4	11	8	13	10	sw.	Ruby H. Martyn.
Plymouth	Plymouth	.....	28	36.9	.....	60	4†	11	9	42	4.08	.....	1.51	T.	11	14	3	14	w.	Laura B. Knapp.
Provincetown	Barnstable	40	26	38.4	+ 8.6	55	3	16	9	22	4.44	+ 0.79	1.03	T.	12	15	0	16	sw.	Gideon Bowley.
Rockport	Essex	25	11	37.6	.....	58	31	10	9	24	2.97	.....	0.73	0	11	10	8	13	sw.	C. F. P. Bearse.
Rutland	Worcester	1,160	11	31.8	.....	56	3†	4	8	48	3.38	.....	1.04	3.6	15	14	1	16	sw.	State Sanatorium.
Turners Falls	Franklin	200	22	35.4	+13.8	57	3	12	9	27	3.61	+ 0.79	1.17	3.5	11	8	4	19	.....	Turners Falls Co.
Westboro	Worcester	298	39	39.0	+13.5	59	4	15	9	33	2.87	− 1.10	1.40	2.0	10	.....	.....	.....	.....	G. S. Newcomb.
Williamstown	Berkshire	711	32	33.8	+12.0	58	21	10	9†	36	2.99	− 0.36	0.65	1.2	13	8	11	12	s.	Williams College.
Worcester	Worcester	518	21	34.2	+ 9.4	59	3	7	9	31	2.60	− 0.43	0.56	1.1	14	9	9	13	sw.	G. W. Swan.
Rhode Island.																				
Block Island	Newport	26	33	39.6	+ 8.2	57	3	18	9	26	5.25	+ 1.39	1.12	T.	15	10	6	15	sw.	U. S. Weather Bureau.
Bristol	Bristol	53	27	38.3	+ 9.3	56	3	15	9	23	4.18	− 0.23	0.84	T.	14	15	7	9	sw.	N. G. Herreshoff.
Kingston	Washington	250	24	35.8	+ 8.1	58	6	10	9	28	4.70	− 0.80	1.02	T.	14	8	10	13	w.	Nathaniel Helme.
Narragansett Pier	Newport	22	31	38.1	+ 9.2	56	31	14	9	27	4.65	− 0.36	1.01	T.	14	14	6	11	sw.	U. S. Weather Bureau.
Providence	Providence	182	9	38.0	+10.8	61	6	13	9	35	2.90	− 0.92	0.59	1.6	16	10	8	13	w.	Do.
Connecticut.																				
Bridgeport	Fairfield	20	20	37.9	.....	58	3	15	9	27	3.66	.....	0.54	2.0	14	10	10	11	sw.	William Jennings.
Canton	Hartford	900	52	35.6	+11.5	59	3	10	9	30	3.10	− 0.65	1.13	1.5	12	10	8	13	s.	G. J. Case.
Colchester	New London	370	27	35.0a	+ 7.8	56a	31	7a	9	31a	3.63	− 0.43	0.75	2.0	13	11	6	14	s.	S. P. Willard.
Cream Hill	Litchfield	1,300	17	32.2	+ 9.6	55	3†	4	9	29	2.98	− 0.36	0.76	1.5	13	11	1	19	s.	C. L. Gold.
Danielson	Windham	300	11	37.1	.....	60	3†	11	9†	29	3.67	.....	0.90	2.0	10	14	7	10	s.	F. E. Bitgood.
Hartford	Hartford	159	9	37.0	+11.5	60	3	12	9	36	2.82	− 1.01	1.02	0.8	14	6	11	14	s.	U. S. Weather Bureau.
Hawleyville	Fairfield	600	15	.....	.....	.....	.....	.....	.....	.....	3.43	.....	0.84	2.0	12	.....	.....	.....	.....	C. B. Hawley.
New Haven	New Haven	127	126	38.2	+10.9	58	3	14	9	34	3.64	− 0.27	0.68	1.9	17	6	9	16	s.	U. S. Weather Bureau.
New London	New London	47	43	39.9	+12.1	58	3†	17	9	23	3.69	− 0.54	0.60	2.0	15	8	12	11	sw.	Thos. C. Dillon.
North Grosvenor Dale	Windham	400	23	34.6	+ 9.8	60	3	10	13	44	3.70	− 1.10	1.21	.....	13	15	5	11	sw.	Grosvenor Dale Co.
Norwalk	Fairfield	116	23	36.2	+10.4	60	3	14	10	29	3.93	+ 0.62	0.57	1.5	14	12	6	13	nw.	George C. Comstock.
Southington	Hartford	140	44	37.1	+12.3	59	3	12	9	30	3.10	− 0.85	0.80	2.0	13	9	12	10	n.	Luman Andrews.
Storrs	Tolland	640	25	35.4	+ 9.7	57	3†	9	9	39	3.95	− 0.03	1.00	T.	13	17	0	14	sw.	Agricultural Exp. Station.
Torrington	Litchfield	625	12	33.3	.....	57	4†	9	9	46	3.35	.....	1.00	0.7	16	13	1	17	sw.	Prof. E. H. Forbes.
Voluntown	New London	260	28	36.4	+ 8.5	60	3†	5	10	39	3.86	− 1.26	0.78	3.5	13	13	6	12	sw.	J. L. Herbert.
Waterbury	New Haven	400	38	37.4	+11.9	59	3	11	9	28	3.01	− 1.57	0.76	1.5	13	.....	.....	.....	.....	N. J. Welton.

TABLE 1.—*Climatological data for January, 1913. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New York.																				
Addison	Steuben	1,000	23	36.0	+11.2	66	8	11	13	45	3.00	+ 0.84	1.18	1.2	14	12	3	16	sw.	Dr. H. R. Ainsworth.
Albany	Albany	97	92	34.6	+12.1	61	3	10	9	36	2.20	− 0.39	0.65	T.	12	6	10	15	s.	U. S. Weather Bureau.
Alfred	Allegany	1,976	18	33.0	+10.4	54	17	7	9	36	4.37	+ 1.79	1.04	5.5	13	.....	.....	.....	.....	Jerome F. Davis.
Amsterdam	Montgomery	277	9	30.1	.....	53	31	4	9	28	2.97	.....	.....	T.	8	17	1	13	e.	Emery Elmwood.
Athens	Greene	90	11	35.6	+11.5	58	3†	12	9	29	1.92	− 0.66	0.67	0.5	8	16	4	11	s.	E. C. Brooks.
Ballston Lake	Saratoga	400	9	31.5	.....	56	3	7	9	27	3.03	.....	0.66	0.5	14	7	8	16	s.	George R. Schauber.
Bedford	Westchester	450	22	.....	.....	.....	.....	14	9	....	3.44	− 0.23	0.50	T.	13	16	7	8	.....	Dr. L. Rosenberg.
Beerston	Delaware	1,214	1	33.0	.....	59	3	5	9	36	4.70	.....	1.43	3.0	12	10	6	15	w.	John Q. Barlow.
Binghamton	Broome	875	22	35.6	+12.5	57	20	12	9	40	2.88	+ 0.90	0.75	1.0	13	2	10	19	e.	U. S. Weather Bureau.
Bouckville	Madison	1,350	16	30.0	+10.8	51	21	− 3	9	33	3.68	+ 0.10	0.97	8.5	15	2	9	20	sw.	L. W. Griswold.
Boyds Corners	Putnam	560	31	.....	.....	.....	.....	.....	.....	.....	3.84	− 0.11	.....	.....	.....	.....	.....	.....	.....	Thos. Manning.
Carmel	....do	500	21	33.8	+ 9.2	58	12	10	9	38	3.43	− 0.51	0.82	1.0	12	11	4	16	sw.	Do.
Chatham	Columbia	470	12	34.9	+11.8	60	3	8	9	37	1.98	− 0.59	0.86	T.	10	12	5	14	s.	Morton R. Tank.
Cooperstown	Otsego	1,250	59	31.6	+11.4	53	21†	3	9	33	4.46	+ 1.83	0.70	.....	14	14	7	10	s.	Miss Elizabeth C. Keese.
Corinth	Saratoga	542	11	.....	.....	.....	.....	.....	.....	.....	3.94	.....	0.85	.....	11	.....	.....	.....	.....	A. M. Hollister.
Cortland	Cortland	1,129	51	34.9	+12.4	56	8	2	9	37	4.47	+ 1.85	1.00	3.5	16	7	5	19	s.	F. G. Baker.
Cutchogue	Suffolk	32	14	38.4	+ 8.2	60	6	17	9	29	5.82	+ 1.92	0.88	T.	13	14	6	11	sw.	William A. Fleet.
DeRuyter	Madison	1,300	10	31.4	+10.5	54	31	− 1	9	31	5.34	+ 2.38	0.98	5.9	14	12	4	15	s.	B. D. Crandall.
Elmira	Chemung	863	30	35.6	+11.0	58	7	14	9	29	3.14	+ 1.09	1.38	0.2	10	8	3	20	sw.	Thurber A. Brown.
Glens Falls	Warren	340	22	31.3	+11.7	55	3	6	9	29	3.66	+ 0.79	0.64	8.0	12	8	3	20	sw.	Prof. C. L. Williams.
Gloversville	Fulton	850	21	28.6	+10.2	50	3	2	9	25	5.07	+ 1.78	0.98	4.5	14	8	11	12	w.	W. L. McLean.
Greenfield Center	Saratoga	314	15	27.8	+ 8.0	56	3	6	9	24	4.88	+ 1.30	0.75	.....	11	12	4	15	sw.	S. E. Darrow.
Greenwich	Washington	425	16	33.6	+13.1	59	3	8	9	31	.....	.....	.....	2.2	...	14	8	9	n.	Homer J. Whitcomb.
Griffin Corners	Delaware	2,260	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Harold O. Judd.
Haskinville	Steuben	.....	18	.....	.....	.....	.....	.....	.....	.....	2.72	+ 0.75	1.15	8.0	10	.....	.....	.....	.....	W. G. Collins.
Hoosick Falls	Rensselaer	410	11	.....	.....	.....	.....	.....	.....	.....	3.00	.....	0.80	0.5	15	15	9	7	w.	Sanford L. Cluett.
Indian Lake	Hamilton	1,705	14	25.2	+ 9.0	49	3†	− 10	14	47	4.79	+ 1.90	0.95	8.6	14	12	3	16	nw.	Lester Severie, jr.
Jeffersonville	Sullivan	1,240	10	32.4	.....	55	31	11	9	29	4.34	.....	1.60	1.0	13	13	5	13	w.	Chas. Wilfert, jr.
Liberty	....do	2,300	31	31.0	+ 9.4	54	20	6	8†	42	4.13	+ 1.30	1.35	T.	15	12	0	19	nw.	Dr. H. M. King.
Little Falls	Herkimer	924	15	31.9	+12.0	52	21	2	9	32	4.91	+ 2.56	0.83	10.0	14	10	5	16	w.	O. J. Dempster.
Mohonk Lake	Ulster	1,245	17	34.0	+10.0	54	19†	10	13	29	3.96	+ 1.00	1.58	1.0	11	7	16	8	sw.	A. K. Smiley.
Morehouseville	Hamilton	1,697	5	25.5	.....	48	31	− 8	9	33	8.39	.....	1.08	12.5	18	13	7	11	w.	Theo. C. Remonda.
Morrisville	Madison	1,325	1	32.1	.....	52	8†	− 2	9	37	3.08	.....	0.45	9.5	10	10	5	16	s.	Prof. I. M. Charlton.
Mount McGregor	Saratoga	1,060	1	30.6	.....	54	3	6	9	33	3.62	.....	1.30	.....	7	7	19	5	.....	F. W. Tooker.
Mount Hope	Westchester	200	16	38.8	+10.6	60	12†	14	13	32	5.82	+ 1.99	1.17	.....	9	5	15	11	.....	W. A. Cornelius.
Newark Valley	Tioga	825	26	.....	.....	.....	.....	.....	.....	.....	3.37	+ 0.94	1.25	T.	11	.....	.....	.....	.....	Lyman D. Clinton.
New Berlin	Chenango	1,090	6	.....	.....	.....	.....	.....	.....	.....	4.11	.....	1.02	0.5	11	15	1	15	sw.	Chas. F. Sarle.
New Lisbon	Otsego	1,234	23	30.4	+10.6	53	21†	0	9	36	4.33	+ 1.94	0.83	3.0	14	6	6	19	s.	G. A. Yates.
New York City	New York	314	88	40.0	+ 9.8	61	12	18	9	37	2.77	− 1.02	0.48	0.3	16	11	4	16	sw.	U. S. Weather Bureau
North Creek	Warren	1,002	5	28.4	.....	51	18	1	9	30	4.45	.....	1.27	10.0	11	15	4	12	w.	W. G. Kenwell.
Northville	Fulton	742	17	.....	.....	.....	.....	.....	.....	.....	4.58	.....	1.11	9.0	9	.....	.....	.....	.....	P. C. Pickard.
Oneonta	Otsego	1,112	19	33.9	+10.0	57	21	7	9	42	3.91	+ 1.58	0.73	0.5	14	13	2	16	sw.	H. W. Lee.
Oxford	Chenango	916	48	31.9	+ 9.4	52	20†	8	9	26	5.63	+ 2.72	1.05	5.6	14	4	11	16	sw.	J. P. Davis.
Oyster Bay	Nassau	40	9	.....	.....	.....	.....	.....	.....	.....	2.92	.....	0.55	.....	11	18	4	9	sw.	Prof. Thos. Colby.
Port Jervis	Orange	470	29	34.1	+ 9.3	58	21	11	10†	33	3.57	+ 0.23	0.80	1.5	14	12	7	12	nw.	W. H. Nearpass.
Roslyn	Nassau	215	1	39.0	.....	60	12	16	13	26	3.69	.....	0.54	.....	14	13	7	11	sw.	C. H. Hechler.
Salisbury	Herkimer	1,526	16	26.6	+ 7.9	48	3	− 4	29	32	6.05	+ 3.05	0.87	9.0	15	13	4	14	w.	Joseph Ryan.
Scarsdale	Westchester	200	9	38.7	.....	61	3	15	9†	32	3.87	.....	0.75	T.	14	16	1	14	sw.	C. H. Wilmarth.
Setauket	Suffolk	40	8	39.5	+ 8.8	61	6	17	9	26	3.54	− 0.42	0.58	0.5	12	12	6	13	w.	Selah B. Strong.
Sherburne	Chenango	.....	6	.....	.....	.....	.....	.....	.....	.....	4.38	.....	0.67	3.1	13	6	0	25	s.	E. B. Collins.
Southampton	Suffolk	36	12	39.2	+ 8.3	57	3	17	9	28	4.93	+ 0.82	0.67	T.	16	12	11	8	sw.	W. L. Jagger.
Southeast Reservoir	Putnam	310	8	.....	.....	.....	.....	.....	.....	.....	3.32	− 0.37	.....	.....	.....	.....	.....	.....	.....	Thos. Manning.
South Edmeston	Otsego	1,300	1	31.6	.....	54	21	0	9	32	4.23	.....	0.70	4.0	15	10	6	15	s.	F. H. Bilderbeck.
Spier Falls	Saratoga	400	12	29.8	+10.0	58	3	4	8†	42	4.41	+ 1.41	1.03	4.0	14	10	10	11	w.	George E. Fifield.
Trenton Falls	Oneida	751	10	.....	.....	.....	.....	.....	.....	.....	7.32	.....	1.55	9.0	16	.....	.....	.....	.....	C. W. Young.
Tribes Hill	Montgomery	268	10	.....	.....	.....	.....	.....	.....	.....	6.50	.....	.....	1.0	.....	.....	.....	.....	.....	R. S. Marshall.
Troy	Rensselaer	.....	0	.....	.....	.....	.....	.....	.....	.....	1.22	.....	0.20	.....	18	.....	.....	.....	.....	David B. Plum.
Utica	Oneida	537	47	.....	.....	.....	.....	.....	.....	.....	5.28	+ 2.08	1.00	.....	15	.....	.....	.....	.....	W. E. Young.
Wading River	Suffolk	112	7	38.2	.....	62	3†	12	10	33	4.93	.....	0.61	0.2	16	16	3	12	s.	H. B. Fullerton.
Wappingers Falls	Dutchess	110	23	37.2	+12.2	60	3†	15	9	34	4.06	+ 1.19	0.75	1.0	14	10	12	9	se.	H. C. Townsend.
Warwick	Orange	538	19	.....	.....	.....	.....	.....	.....	.....	2.96	+ 0.34	0.50	2.0	13	16	7	8	.....	John W. Sly.
Waverly	Tioga	824	21	34.6	+10.8	57	8	12	9†	37	3.02	+ 0.72	1.35	0.5	15	8	8	15	s.	J. F. Shoemaker.
West Berne	Albany	946	14	32.7	+11.2	57	20†	3	9	37	1.23	− 0.72	0.37	1.0	8	4	4	23	se.	W. H. Haverly.
West Point	Orange	167	64	.....	.....	60	21	17	13	....	4.09	+ 0.57	.....	1.2	10	8	10	13	s.	U. S. Military Academy.
Windham	Greene	1,520	13	35.1	+13.3	59	21	7	9	36	2.94	+ 0.69	0.85	T.	13	7	19	5	sw.	A. R. Mott.
Pennsylvania.																				
Altoona	Blair	1,181	25	.....	.....	.....	.....	14	13	....	4.39	+ 1.80	0.62	8.5	16	10	6	15	w.	C.W. Billin.
Bethlehem	Northampton	260	12	41.4	+12.2	61	3†	18	9	38	4.22	+ 0.58	0.79	0.5	14	12	5	14	w.	Prof. E. C. Roest.
Clearfield	Clearfield	1,107	5	35.2	.....	57	20	10	9	32	8.90	.....	1.30	7.0	19	10	1	20	w.	Raymond C. Ogden.
Drifton	Luzerne	1,633	15	32.9	+ 7.4	55	20†	7	9	37	5.73	+ 2.61	1.25	7.5	10	16	2	13	w.	Eckley B. Coxe, jr.
Emporium	Cameron	1,050	26	34.4	+ 8.5	56	8†	11	9	36	7.06	+ 3.70	1.14	3.5	16	6	8	17	w.	T. B. Lloyd.
Ephrata	Lancaster	384	13	38.6	+ 9.6	60	12	17	9†	34	2.37	− 0.63	0.28	1.8	14	15	0	16	se.	W. L. Frantz.
Everett	Bedford	1,080	15	36.1	+ 8.2	61	18	8	9	35	3.30	+ 0.44	0.70	3.0	13	8	14	9	w.	B. L. Steckman.
George School	Bucks	184	6	39.2	.....	62d	12	16	9	34d	3.19	.....	0.55	0.7	16	11	3	17	sw.	N. W. Swayne.
Gettysburg	Adams	600	39	37.4	+ 8.9	59	18	15	9	29	2.82	− 0.18	0.86	3.0	14	12	6	13	w.	Col. E. B. Cope.
Gordon	Schuykill	804	9	35.8	.....	58	8	11	13	32	3.88	.....	0.83	2.0	13	14	3	14	w.	Capt. J. G. Johnson.
Hamburg	Berks	380	17	36.7a	+ 8.0	56	18†	11	10†	31a	3.26	− 0.46	1.00	2.3	13	17	1	13	se.	W. J. Kalbach.
Harrisburg	Dauphin	361	25	38.6	+ 9.9	58	18	20	9	29	2.58	− 0.24	0.93	0.8	16	7	6	18	w.	U. S. Weather Bureau.
Huntingdon	Huntingdon	650	25	35.7	+ 7.1	58	18†	13	10	33	3.80	+ 0.58	0.50	5.0	13	9	4	18	w.	Prof. W. J. Swigart.
Hyndman	Bedford	977	6	37.0	.....	62	18†	13	14	35	1.51	.....	0.50	2.0	6	13	5	13	w.	H. Somers Fischer.
Lancaster	Lancaster	255	20	38.9	.....	61	8†	18	9†	35	2.86	− 0.11	0.38	3.0	13	13	5	13	e.	F. H. Shaw.
Lawrenceville	Tioga	1,006	15	33.8	+ 9.5	58	18	9	9	35	2.35	+ 0.18	1.40	T.	12	10	2	19	.....	C. P. Darling.
Lebanon	Lebanon	458	26	37.6	+ 9.1	60	21	16	10	32	2.70	− 0.81	0.57	.....	11	14	3	14	nw.	Harry M. Schott.
Le Roy	Bradford	1,400	24	33.3	+ 9.6	54	8	11	13	36	3.35	+ 0.70	1.20	2.6	17	7	8	16	sw.	G. W. T. Warburton.
Lock Haven	Clinton	560	25	35.8	+ 7.9	65	18	15	9†	30	4.51	+ 1.43	1.06	0.2	15	1	11	19	w.	Prof. J. A. Robb.
Marion	Franklin	640	9	37.0	.....	65	19	16	10†	34	3.65	.....	0.94	6.0	16	13	1	17	.....	Hon. C. B. Hege.
Mauch Chunk	Carbon	634	24	36.2	+ 9.1	59	21	13	10	44	4.02	+ 0.27	0.93	3.0	15	13	1	14	w.	F. C. Wintermute.
Mifflintown	Juniata	445	9	34.8	.....	58	21	15	10	31	3.65	.....	0.99	1.5	14	8	2	21	w.	Wellington Smith.
Milford	Pike	455	10	33.2	.....	56	31	10	10†	36	3.13	.....	1.07	0.5	13	13	5	13	se.	Mrs. Alla Doughty.
Montrose	Susquehanna	1,658	9	31.8	.....	55	3	10	14†	32	4.94	.....	1.50	5.0	13	10	7	14	s.	Silas Jagger.
New Germantown	Perry	873	9	36.7	.....	60	19†	15	13†	37	4.79	.....	0.90	2.2	13	10	1	20	w.	Ed. C. Johnston.
Philadelphia	Philadelphia	117	42	42.2	+10.4	63	17	22	9	35	2.99	− 0.42	0.68	T.	18	8	7	16	s.	U. S. Weather Bureau.
Pocono Lake	Monroe	1,662	12	32.2	+ 9.2	52	7†	7	14	30	3.97	+ 0.95	1.08	1.0	11	9	4	18	sw.	Pocono Lake Ice Co.

TABLE 1.—*Climatological data for January, 1913. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
***Pennsylvania*—Contd.**																			
Reading	Berks	280	40	39.2	+ 9.0	61	12	19	9	34	3.81	+ 0.42	0.77	1.7	16	9	5	17	se.	U. S. Weather Bureau.
Scranton	Lackawanna	805	13	37.2	+11.7	59	21	15	9	40	2.50	− 0.30	0.48	1.7	18	4	11	16	s.	Do.
Selinsgrove	Snyder	455	25	37.0[e]	+ 8.3	56	17†	16	15	30	3.77	+ 0.66	1.36	0.5	15	0	15	16	sw.	J. M. Boyer, C. E.
State College	Center	1,191	25	34.8	+ 8.4	57	12	12	9	35	4.79	+ 1.95	0.82	3.5	18	.....	.....	.....	sw.	Prof. Wm. Frear.
Towanda	Bradford	754	18	35.7	+11.0	56	8	13	13	34	3.01	+ 1.13	1.14	0.3	13	10	3	18	s.	Hiram E. Bull, C. E.
Wellsboro	Tioga	1,327	36	34.3	+ 9.7	55	8	12	9	31	4.56	+ 1.55	1.28	T.	12	12	9	10	sw.	O. L. White.
West Chester	Chester	455	59	40.2	+10.1	61	17	18	9	31	4.43	+ 0.39	0.93	0.5	16	9	7	15	s.	J. C. Green, D. D. S.
Williamsport	Lycoming	530	23	35.4	+ 8.3	57	26	12	9	28	4.25	+ 1.42	0.95	T.	13	12	3	16	se.	Henry H. Guise.
New Jersey.																			
Atlantic City	Atlantic	16	40	42.4	+ 9.9	63	12	22	9	31	4.36	+ 0.96	0.83	0.1	14	8	6	17	sw.	U. S. Weather Bureau.
Bayonne	Hudson	50	23	39.8	+ 9.7	62	3*	19	13	34	3.34	− 0.79	0.72	1.5	15	11	4	16	sw.	Erskine R. Eadie.
Belvidere	Warren	289	23	36.8	+ 9.3	60	31	18	9*	31	4.12	+ 0.37	0.77	1.0	15	15	1	15	.....	Samuel J. Hixson.
Bergen Point	Hudson	37	16	39.4	+ 9.2	62	12	20	9*	33	2.63	− 1.79	0.60	1.3	11	12	10	9	sw.	Wm. H. Mitchell, M. D.
Boonton ‖	Morris	230	23	.....	.....	.....	.....	.....	.....	.....	4.03	− 0.17	0.77	2.0	15	12	2	17	sw.	Joseph White.
Bridgeton	Cumberland	30	32	42.4	+ 9.4	67	6	20	9	33	3.35	− 0.39	0.90	0	12	15	3	13	s.	Henry A. Jorden.
Burlington ‖	Burlington	12	27	39.2[b]	.....	63[i]	12	20[b]	9	40[i]	3.32	− 0.22	0.53	T.	18	14	5	12	sw.	D. S. B. McCoy.
Cape May City	Cape May	17	35	43.2	+ 9.1	62	8	24	13	30	4.22	+ 0.85	0.96	0	16	10	13	8	s.	U. S. Weather Bureau.
Charlotteburg	Passaic	719	21	36.0	+ 8.9	59	3	10	10	33	.....	.....	.....	0.1	....	14	8	9	sw.	George S. Briggs.
Chatham ‖	Morris	234	11	.....	.....	.....	.....	.....	.....	.....	3.80	− 0.70	0.70	2.0	14	.....	.....	.....	w.	M. A. Butler.
Clayton	Gloucester	126	20	42.1	+11.2	64	17	20	9*	30	3.83	+ 0.07	0.73	T.	14	16	1	14	sw.	William T. Farley.
Culvers Lake	Sussex	848	12	.....	.....	.....	.....	.....	.....	.....	2.95	− 0.23	0.83	2.0	14	15	2	14	se.	Brice E. Riker.
Dover	Morris	600	29	34.5	+ 7.9	58[a]	21	13	14	35[a]	4.71	+ 0.22	1.01	1.5	15	6	10	15	.....	William C. Harris.
Elizabeth	Union	45	34	39.8	+ 9.7	62	12*	19	9*	35	3.53	− 0.57	0.55	2.0	16	13	7	11	sw.	L. B. Bonnett.
Flemington	Hunterdon	140	25	39.0	+ 9.4	61	3*	18	10	34	4.16	+ 0.69	0.74	1.0	16	10	5	16	sw.	Hiram E. Deats.
Haddonfield	Camden	75	26	41.0	+11.0	63	8	19	9	31	3.69	+ 0.30	0.61	T.	15	11	11	9	nw.	Charles F. Richardson.
Hammonton	Atlantic	103	15	.....	.....	.....	.....	.....	.....	.....	3.37	− 0.58	0.63	0	15	3	17	11	.....	Orville Bassett.
Hightstown ‖	Mercer	119	21	38.0	+ 7.1	63	11	10	9	41	.....	.....	.....	0	....	11	4	16	w.	Frank V. Jemison.
Highwood	Bergen	90	26	38.8	+ 9.9	63	12	15	13	36	3.41	− 0.66	0.53	0.5	15	12	8	11	sw.	Charles J. Bates.
Indian Mills	Burlington	76	24	41.4	+10.0	68	6	15	9*	38	3.57	− 0.13	0.73	0	15	13	5	13	s.	James Armstrong.
Jersey City	Hudson	10	15	40.0	+ 9.2	62	12	21	9*	28	3.22	− 0.64	0.51	0.8	15	10	6	15	nw.	Samuel K. Pearson, jr.
Lakewood	Ocean	54	11	40.2	+ 8.8	67	6	18	10	33	3.22	− 0.29	0.56	T.	13	5	12	14	sw.	Ralph Robertson.
Lambertville	Hunterdon	95	26	39.8	+ 9.4	62	12*	19	13*	33	3.12	− 0.62	0.50	1.0	15	10	6	15	sw.	William R. Bowne.
Layton	Sussex	550	14	34.8[a]	+10.8	57[a]	31	10[a]	14	31	3.11	− 0.39	0.82	0.5	13	15	3	13	sw.	Warren C. Hursh.
Little Falls	Passaic	175	11	.....	.....	.....	.....	.....	.....	.....	3.88	− 0.34	0.79	2.6	15	.....	.....	.....	w.	A. Sweetman.
Long Branch	Monmouth	30	6	40.7	.....	67	12*	18	9	32	4.42	.....	0.67	T.	17	7	11	13	sw.	William D. Martin, jr.
Mahwah ‖	Bergen	312	11	.....	.....	.....	.....	.....	.....	.....	4.33	− 0.04	0.78	2.5	14	.....	.....	.....	.....	Charles L. Baker.
Moorestown	Burlington	75	51	41.1	+11.0	63	12	20	10*	29	3.28	− 0.20	0.46	T.	14	11	7	13	sw.	George L. Gillingham.
Newark	Essex	159	70	39.7	+10.1	62	12*	19	9*	32	3.75	− 0.01	0.69	2.1	16	10	9	12	nw.	Prof. William Wiener.
New Brunswick	Middlesex	100	60	39.6	+ 9.1	63	3	18	13	33	3.10	− 0.71	0.42	1.0	14	6	10	15	sw.	Harry B. Halcombe.
Newton	Sussex	678	34	35.3	+ 9.6	63	17	15	9*	32	4.51	+ 1.01	1.50	1.0	13	13	3	15	w.	F. Vernon Losee.
Northfield	Atlantic	25	6	.....	.....	.....	.....	.....	.....	.....	3.80	.....	0.79	0	14	.....	.....	.....	.....	William L. Flick.
Paterson	Passaic	80	42	39.7	+10.3	62	12*	18	13	33	3.38	− 0.68	0.86	1.6	13	6	15	10	sw.	Heber A. Probert.
Phillipsburg	Warren	363	23	37.6	+ 9.7	60	21	18	9*	35	3.60	− 0.05	0.68	0.4	14	13	3	15	sw.	D. W. Smith.
Plainfield	Union	100	27	38.6	+ 9.2	63	3	18	10*	32	3.75	− 0.14	0.63	1.4	16	7	8	16	sw.	John Neagle.
Pleasantville	Atlantic	26	15	.....	.....	.....	.....	.....	.....	.....	3.60	+ 0.20	0.69	0	14	18	2	11	.....	Lincoln Van Gilder.
Pompton Plains ‖	Morris	195	11	.....	.....	.....	.....	.....	.....	.....	3.29	− 1.10	0.70	2.0	13	16	1	14	.....	M. S. Taylor.
Somerville	Somerset	60	30	38.8	+ 9.6	65	3	16	10	34	3.14	− 0.34	0.66	1.0	13	12	4	15	sw.	A. A. Macdonald.
South Orange	Essex	200	43	38.0	+ 9.3	61	12	18	9*	34	2.86	− 1.28	0.60	1.0	16	9	7	15	w.	Dr. Wm. J. Chandler.
Sussex	Sussex	442	23	35.6	+ 9.5	60	3	12	10	27	2.82	− 0.79	0.70	1.0	12	10	4	17	sw.	George Dymock.
Trenton	Mercer	63	42	40.8	+ 7.9	64	31	19	9	32	3.12	− 0.40	0.50	T.	15	8	5	18	sw.	James L. Bennett.
Tuckerton	Ocean	23	20	41.0	+ 9.3	63	8*	13	15	39	.....	.....	.....	0	....	9	11	11	sw.	Frank R. Austin.
Vineland	Cumberland	118	44	42.0	+10.0	67	6	19	9	33	3.08	− 0.69	0.95	0	15	15	5	11	sw.	Alfred Chalmers.
Woodbine	Cape May	43	22	44.4	+12.0	68	3*	14	28	43	3.99	− 0.26	0.85	0	13	....	....	....	.....	Prof. R. D. Maltby.
West Virginia.																			
Bayard	Grant	2,500	11	36.3	+ 8.8	68	20	9	10	42	6.21	+ 1.08	1.00	20.5	17	9	5	17	w.	Solomon Clark.
Burlington	Mineral	875	19	38.2	+ 7.7	67	16†	13	9†	40	2.10	− 0.21	0.85	3.0	7	9	13	9	w.	J. W. Vandiver.
Franklin	Pendleton	.....	7	42.0[e]	.....	69	11	13	13	40[c]	.....	.....	.....	.....	.....	.....	.....	.....	.....	Fred Calhoun.
Lost City	Hardy	.....	7	39.4	.....	62	7†	18	14†	32	2.31	.....	0.61	1.0	11	12	7	12	w.	B. D. Hinegardner.
Martinsburg	Berkeley	435	21	38.4	+ 8.3	65	17†	17	10	34	2.13	− 0.27	0.40	2.0	12	13	5	13	se.	G. W. Van Metre, C. E.
Moorefield	Hardy	900	18	38.8	+ 6.9	65	7	15	14	35	1.84	− 0.72	0.67	2.0	5	12	16	3	sw.	John C. Fisher.
Romney	Hampshire	824	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. F. Dodge.
Upper Tract	Pendleton	1,230	15	42.4	+ 8.8	69	11	12	13	47	2.35	− 0.38	0.60	.....	6	4	15	12	w.	J. M. Mallow.
Maryland.																			
Annapolis	Anne Arundel	45	41	43.9	+ 9.5	74	22	24	15	47	2.30	− 1.08	0.55	0	11	10	0	21	s.	U. S. Naval Academy.
Baltimore	Baltimore	115	43	43.5	+10.1	68	17	25	9	34	2.45	− 0.77	0.56	T.	18	11	4	16	sw.	U. S. Weather Bureau.
Cambridge	Dorchester	25	15	45.6	+10.3	70	8	22	15	31	3.13	+ 0.03	0.95	0	13	13	6	12	sw.	T. E. Keenan.
Cheltenham	Prince Georges	230	13	43.8	+ 9.8	69	8	20	22	35	2.21	− 1.24	0.78	0	10	12	4	15	nw.	George Hartnell.
Chestertown	Kent	80	27	43.0	+10.6	63	8	23	9†	29	4.49	+ 1.35	0.78	T.	15	8	11	12	s.	M. W. Thomas
Chewsville	Washington	530	16	40.0	+ 9.4	63	17	17	9†	29	2.89	+ 0.25	0.75	1.0	14	11	9	11	sw.	D. Paul Oswald.
Clear Spring	....do	650	15	36.0	+ 6.6	60	26	17	13†	30	2.77	− 0.51	0.32	6.0	16	12	11	8	w[d]	W. W. Frantz.
Coleman	Kent	80	13	42.6	+10.0	65	3†	23	9†	28	3.19	− 0.10	0.64	1.0	14	18	1	12	nw.	J. S. Harris.
College Park	Prince Georges	170	22	43.4[a]	+10.4	66[a]	8†	18[a]	15†	38[a]	2.72	− 0.28	0.84	T.	11	15[a]	6[a]	9[a]	s.	Prof. H. J. Patterson.
Cumberland	Allegany	623	39	38.6	.....	62	18	16	10	32	2.40	+ 0.02	0.46	T.	14	9	8	14	w.	F. E. Harrington.
Darlington	Harford	300	22	40.2	+ 9.7	66	19	19	13	35	2.83	− 0.34	0.58	T.	14	10	10	11	sw.	Prof. A. F. Galbreath.
Denton	Caroline	42	18	44.2	+11.2	67	7†	20	10†	34	2.17	− 0.31	0.80	0	9	20	3	8	w.	H. B. Mason.
Easton	Talbott	35	22	44.8	+10.7	67	8	24	9†	30	2.46	− 0.43	0.85	0	8	9	16	6	w.	Henry Shreve.
Emmitsburg	Frederick	720	41	40.0	+ 9.5	61	22	19	9†	37	3.78	+ 0.65	1.00	3.5	15	8	4	19	sw.	Joseph M. Sheridan.
Fallston	Harford	450	43	40.9	+10.2	64	8	19	9†	26	2.38	− 1.22	0.59	T.	14	4	17	10	sw.	J. H. Curtiss.
Frederick	Frederick	275	38	40.2	+ 8.2	64	17	18	10	31	3.07	+ 0.02	1.06	1.2	16	15	5	11	se.	Chas. S. Birely.
Frostburg	Allegany	1,929	6	37.6	.....	60	17	15	9	36	2.81	− 0.89	0.43	3.0	14	9	16	6	se.	R. A. Walter.
Great Falls	Montgomery	200	23	40.2	+ 8.9	70	17	19	1†	40	3.30	+ 0.37	1.05	0	10	9	6	16	ne.	Chas. E. Sullivan.
Green Spring Furnace	Washington	450	21	38.8	+ 8.7	63	18	17	13†	28	2.67	− 0.05	0.48	5.5	14	13	8	10	se.	E. G. Kinsell.
Keedysville	....do	400	9	40.4	.....	64	17†	18	13†	32	2.23	.....	0.58	3.0	15	14	5	12	s.	J. A. Miller.
Lake Montebello	Baltimore	200	4	41.3	.....	67	17	22	9	34	2.31	.....	0.56	T.	12	14	4	13	s.	Martin L. Dobler.
Laurel	Prince Georges	150	19	40.2	+ 7.4	66	17	17	15	34	3.71	+ 0.65	1.00	0.4	11	13	7	11	.....	Dr. T. M. Baldwin.
Leonardtown	St. Marys	100	3	45.4	.....	71	8	25	10	32	2.52	.....	0.93	0	11	17	5	9	sw.	Brother Fidelis.
Monrovia	Frederick	630	28	41.1	+10.1	63	17	17	10	32	3.50	+ 0.56	0.67	0.4	14	11	3	17	s.	J. H. Lawson.
Pocomoke City	Worcester	37	20	47.4	+ 8.9	71	8	25	9	34	3.81	+ 1.27	1.25	T.	9	12	9	10	s.	Hon. R. M. Stevenson.
Porto Bello	St. Marys	38	9	45.0	.....	70	7†	23	22	36	4.62	.....	0.94	0	13	11	7	13	sw.	Mrs. Clara C. Hyatt.
Princess Anne	Somerset	17	20	45.0	+ 9.6	70	7†	23	22	36	4.62	+ 2.05	0.94	0	13	11	7	13	sw.	J. R. Stewart.
Rockville	Montgomery	421	6	43.6	.....	67	17	22	9†	30	2.60	.....	0.74	T.	7	15	6	10	.....	Dr. G. E. Lewis.

TABLE 1.—*Climatological data for January, 1913. District No. 1*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Maryland—Continued.																				
Salisbury	Wicomico	23	8	45.8	.....	72	8	22	15†	37	4.49	.....	1.09	0	13	13	13	5	sw.	W. E. Downing.
Solomons	Calvert	20	22	44.8	+ 9.5	70	8	27	9	33	2.24	− 0.53	0.86	T.	12	8	8	15	sw.	Dr. W. H. Marsh.
State Sanatorium	Frederick	1,460	6	39.0	.....	60	8†	16	9	28	3.05	.....	0.75	3.0	15	10	8	13	w.	Superintendent.
Sudlersville	Queen Annes	65	15	42.5	+ 8.5	65	8	22	9†	31	3.57	+ 0.30	0.76	T.	14	12	4	15	s.	Henry L. Higman.
Takoma Park	Montgomery	320	15	41.4	+ 9.5	66	17	21	9	36	3.45	− 0.09	0.60	T.	15	1	16	14	.....	Henry L. Mooers.
Towson	Baltimore	465	5	41.6	.....	68	11	19	9	36	2.29	.....	0.48	T.	12	7	9	15	se.	C. W. E. Treadwell.
Van Bibber	Harford	100	16	39.4	+ 8.1	63	12	19	10†	30	3.11	+ 0.09	0.69	T.	11	13	3	15	.....	W. Benj. Ford.
Westernport	Allegany	1,000	19	40.2	+10.8	65	18	17	10	39	3.29	+ 0.88	0.60	4.8	12	.....	.....	.....	.....	.....
Westminster	Carroll	860	20	40.4[f]	.....	64[f]	16	19[f]	13†	35[f]	2.81	.....	1.12	T.	8	13[f]	5[f]	7[f]	.....	Prof. G. F. Morelock.
Woodstock	Baltimore	392	43	4.42	+12.3	68	18	23	10	31	2.83	− 0.54	0.83	T.	13	11	6	14	s.	Rev. J. F. Dawson, S. J.
Delaware.																				
Delaware City	New Castle	10	6	41.4	.....	65	8†	22	9	30	3.40	+ 0.79	0.68	T.	10	14	4	13	nw.	H. Morton Price.
Dover	Kent	40	25	44.7	+10.2	67	8	22	9	35	3.13	+ 0.01	0.69	0	11	14	8	9	s.	W. C. Josting.
Milford	....do	20	29	46.2	+10.2	70	6	23	9†	37	3.29	+ 0.17	0.85	0	12	13	5	13	s.	Chas. J. Holzmueller.
Millsboro	Sussex	20	21	45.4	+11.0	71	6	24	15†	36	4.10	+ 1.07	0.82	0	15	15	4	12	sw.	Rev. L. W. Wells.
Seaford	....do	40	22	44.8	+10.7	68	6†	24	9†	33	3.20	+ 0.13	0.84	0	13	14	6	11	s.	E. B. Brown.
Wilmington	New Castle	86	2	43.3[a]	.....	64[a]	8	22[a]	9	24[a]	2.24	− 0.68	0.53	T.	12	13[a]	9[a]	8[a]	se.	A. J. Taylor.
District of Columbia.																				
Washington	Dist. of Columbia.	112	43	43.6	+10.7	68	17	24	14	37	2.85	− 0.52	0.67	T.	16	11	6	14	s.	U. S. Weather Bureau.
Virginia.																				
Culpeper	Culpeper	450	5	42.2	.....	66	7†	19	14†	34	2.59	.....	1.07	0.3	7	7	15	9	s.	Col. H. C. Burrows.
Dale Enterprise	Rockingham	1,350	34	42.6	+ 9.7	70	11	18	19†	38	2.42	− 0.28	0.66	2.0	11	10	9	12	s.	Rev. L. J. Heatwole.
Eastville	Northampton	15	3	49.5	+10.3	74	8	27	15†	40	3.59	+ 0.05	1.04	0	10	12	9	10	sw.	T. B. Robertson.
Fredericksburg	Spottsylvania	100	24	45.5	+ 9.5	73	7	20	15†	39	1.95	− 0.98	0.85	T.	9	12	11	8	sw.	S. G. Howison.
Lincoln	Loudon	500	12	39.8	+ 8.7	65	17	17	10	36	3.77	+ 0.79	1.99	0	11	9	7	15	sw.	Dr. Geo. Roberts.
Mount Weather	....do	1,726	9	38.8	+11.5	63	7	17	9	38	2.20	− 1.10	0.54	0.8	15	8	6	17	s.	U. S. Weather Bureau.
Quantico	Prince William	16	16	42.2	+ 9.2	71	8	18	15†	37	1.64	− 1.66	0.72	0	7	19	3	9	nw.	Richmond, Fredericksburg & Potomac Railroad.
Staunton	Augusta	1,380	21	44.4	+ 9.2	68	7	20	9	31	2.65	− 0.13	0.80	1.0	13	7	14	10	sw.	Ernest Nothnagel.
Warsaw	Richmond	160	21	45.6	+ 9.5	70	17	21	15	36	3.92	+ 1.28	1.10	0	6	9	13	9	s.	C. H Constable.
Winchester	Frederick	717	2	45.2	.....	66	17	20	10†	33	2.13	− 0.51	0.72	0	6	11	5	15	w.	Bentley Kern.
Woodstock	Shenandoah	927	17	42.6	+ 9.7	68	11	18	14	38	1.49	− 0.88	0.51	T.	11	12	10	9	sw.	Mrs. A. G. Artz.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 1, North Atlantic States.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Maine.																															
Ashland	St. John			2.03			.27		1.69									.11		.38		1.18										5.66
Bar Harbor	Coast	T.		1.10	T.		.10	.10	.60			.10	.30		T.			.40	.30	.10		.65	T.	.35	T.		T.	.03		T.		T.	4.13
Cambridge	Kennebec			.95			.22	*	.06				.13					.25	.32		.70			.60						.09		3.26
Cornish	Saco			.45	T.		.10	.25	.06			.08	.05				.02	.51	.10			.25		.52				T.		.15	.30		2.84
Danforth	Penobscot			.60			.42		.41				.50					.25		.70		.55			.22			.10			.18		3.93
Eastport	Coast	.03		1.18	.02		.31	.16	.25			.11	.17					.15	.31	.16		.51		.33			T.	T.			.32		4.01
Eustis	Kennebec			.09	.09		.39	.14	.71	T.		.02	.24	T.				.17	.01	.37	T.	.23	T.	T.	.12	T.	T.	.02			.08		2.68
Fairfield	do		*	.44				*	.70			.04						.52				.40		.28						.09		2.47
Farmington	do			.56	T.		.20	.23	.07	.06		.03						.30	T.	.20		.30		.29	.19						.17	T.	2.54
Gardiner	do			.58	.02		T.	.16	.34			.08	.09				T.	.42	.05	.24		.29		.25	.28			.01			.16		2.97
Greenville	do			.35	T.		.20	.05	.50			T.	.10		T.		T.	.29	.10	.05	T.	.16		.30		T.	T.	T.			.05		2.15
Houlton	St. John			.40					.15															.10							.20	0.85
Howe Brook	Penobscot			.18	.06						.22											.30										0.76
Lewiston	Androscoggin			.83			.06	.13	.35			.08	.11	T.				.44	.15			.32		.93							.27		3.67
Madison	Kennebec			.55			.11	.56				*	.22					.54	.29		.37			.44						.15		.13	3.36
Millinocket	Penobscot			.05	.54		.45		.35	.18			.16	.04				.25	.44		.44		T.	.39		T.	T.			.06	.05		3.40
North Bridgton	Saco			.88				T.	.45			.08	.10					.42	.06			.29		.63							.32		3.23
Orono	Penobscot			.58			.12						.70						.30	.35		.46			.22							.07	2.80
Patten	do			1.00	.20		.30	T.	.50										T.			1.00		.30						.10			3.40
Portland	Coast			.63			T.	.04	.10			.12	.05				T.	.48	.01		.02	.17		.40			T.	T.			.26	.19	T.	2.47
Presque Isle	St. John	.30		.27	T.		.15		.29	.05		T.	.39					.07		.40		.53		T.	.24								2.69
Rumford Falls	Androscoggin			.40			.13	.25	.39			.03	T.					.22	.19	T.	T.	.23		.32				T.			.07	.15	T.	2.38
The Forks	Kennebec																																
Van Buren	St. John			.42	T.		.18	.29	.07			.04	.51		.10			.03	.20	.25		.48			.18		.04				.04		2.83
Winslow	Kennebec			.50				*	.65			*	.15					*	.58			.27		.40							.07		2.62
New Hampshire.																															
Alstead Center	Connecticut			.33	.03		T.	.21	.43			.08	.03					.28	.14	T.		.21		.42				T.		T.	.11		2.27
Benton	do			.69	.26	.14	.41	.03	.03			.05	.52				.28	31	.07					.06					.03	.06		1.09	4.03
Bethlehem	do			11	.05		T.	.63	.48			.10	.41					.24	.19	.16		.46			.06			.06			.03		2.98
Brookline	Merrimack			.55				*	.85				.05					.26	.06		.15			.36						.17		.18	2.63
Concord	do			.32	T.			.08	.25			.09	T.					.20	.09	.01		.16		.40				T.			.16	.05		1.81
Durham	do			.06					.09				.37						.30												.04		0.86
Franklin	do			.40			.01	.27	.34			.15	.02					.38	.20			.31		.53	.02			.03		.04	.30		3.00
Grafton	do																																
Hanover	Connecticut			.50	.04		*	*	.64			*	.18					.48	.15			T.		.42				.05		.06		.40	2.92
Keene	do			.40	.12	T.		.25	.53			.07	.07					.40	.12	T.		.30		.43				.02		.06			2.77
Nashua	Merrimack		T.	.39				*	.72			.10	.06					.19	.04		.02	.10		.30						.10	.01		2.03
Newton	do			.46				.20	.34			T.	.19					.15	.12			.17		.25				T.		.22			2.10
Plymouth	do			.43	.38		T.	.21	.30			.10	.07				T.	.45	.02	.21		.34		.47	.05			T.			.21		3.24
Vermont.																															
Bloomfield	Connecticut			.14	.04		.34	.26	.54				.50					.20	.02	.40		.34		.11	.09			.05			.16		3.19
Cavendish	do			.31	T.		T.	.25	.55				T.					.28	.11	T.		.43		.40	T.			.08	T.	T.	.17		2.58
Chelsea	do			.48	.10		.18	.12	.45				.40					.27	.34			.48		.12				.08		.12		.12	3.26
Manchester	Hudson			.13		.11	T.	.59	.34			T.						.71	.09			.70		.40				.03					3.10
Somerset	Connecticut			.26	.30		.02	.40	1.75			.07	.49					1.25	.33	.10		.62		.59				.15	.03	.06	.12		6.54
St. Johnsbury	do			.20	.16	.02	.27	.33	.61			.08	.43					.24	.02	.35		.36		.10	T.			.01			.07		3.25
Vernon	do			.45	T.			.18	.88			.08	.08					.61	.12		.18			.16						.12		.10	2.96
Woodstock	do			.93			*	*	.77									.36	.42			.33		.30				.11		.13		.34	3.69
Massachusetts.																															
Amherst	Connecticut		T.	.55		.01	.01	.59	1.02			.20	.14			.01	T.	.52	.11			.14		.28				.02		.18		.20	3.98
Ashland	Merrimack			.54			.01	*	1.22			.13	.13					.14	.05			.29		.25				.03		.07		.54	3.40
Bakers Bridge	do								.62				1.11								.35			.08							.30		2.46
Bedford	do			.34				.12	.91			.09	.07			.01		.13	.02	T.		.21		.24				T.		*	.14		2.28
Blue Hill	Coast	.10		.65	.01	T.	T.	.11	1.14			.20	.06			T.	.02	.12	.08	.04		.38		.17				.03		T.	.10	T.	3.21
Boston	do	.01		.55	T.		T.	.15	.87			.12	.07			T.		.10	T.			.24		.13				T.		.06	T.	.08	2.38
Chestnut Hill	do		.35	.30		T.	T.	.90	.35		.13	.03	.07				.07	.05	.04		.27			.15				T.		.14		.53	3.38
Clinton	Merrimack			.49				*	1.23			*	.23			.02		.20	.04			.21			.35			.04		*	.14	.25	3.20
Concord	do	T.		.43				.15	1.12			.09	.06				T.	.13	T.	T.		.19		.29	T.			T.		.01	.10		2.57
Fall River	Coast	.27		1.20				.05	.03			.21	.06				.24	.10	.20			.37		.72				.16		.13		.15	4.49
Fitchburg	Merrimack			.50	T.			.20	.76			.05	.10					.25	.09			.15		.31				.01		.07	.03		2.52
Framingham	do			.52				*	1.13			.11	.10					.09	.03			.20		.20				.01		.10	.01	.46	2.96
Haverhill	do			.45				.05	.74			T.	.11					.09		.02		.14		.16	.07			T.			.14		1.97
Hingham	Coast	.16		.72				1.31	T.			.18	.02				T.	.08	.06		.31			.15				.04		.02		.37	3.42
Hyannis	do	.90		1.70					.70			38					.10	.13	.44			.15		.73				.13		.02	.02	.09	5.49
Jefferson	Merrimack			.53				*	1.22			.20	.22					.04	.07			.27		.34				.09		.11		.43	3.52
Lake Cochituate	do			.52					1.15			.11	.11					.12	.04			.04		.19				.01		.10		.50	2.89
Lawrence	do			.46	T.		T.	*	.73			.13	.10					.17	.04			.14		.29				T.		*	.28		2.34
Leominster	do			.52				.19	1.01			.05	.12					.24	.05			.18		.32				.01		.12	.02		2.83
Lowell	do			.44				*	.98			.14	.09					.18	.07			.10		.30						.17		.26	2.73
Middleboro	Coast	.30	T.	1.35			T.	.07	.68			.22	.05				.09	.10	.18			.35		.35				.17		.13		.63	4.67
Nantucket	do	.77	.01	1.17				.63	.25		T.	.31	.01	T.			.11	.18	.43			.10		1.08	.17	.01		.27		.01	.04	.02	5.57
New Bedford	do																																
Norfolk	do			.56				*	1.56			.17	T.			.04		.12	T.	.08		.47		.16	.05			T.		T.	.15		3.36
Plymouth	do	.16		1.51				*	1.00			.25					*	.09	.15			.40		.35				.17		T.			4.08
Princeton	Merrimack			.50				*	1.08				.24					*	.64			.20		.41				.11		.12		.40	3.70
Provincetown	Coast	.63		1.03				T.	.96			.38	.06				.06	.10	.26			.55		.20				.16			.05		4.44
Rockport	do	.15		.72				.08	.73			.25	.10					.22				.30		.05	.25						.12		2.97
Rutland	Connecticut		.34	.15		T.		1.04	.22		.06	.06	.16			T.	.16	.12	.04		.25	T.		.32				.05		.10	T.	.31	3.38
Somerset	Coast	.22		.91			.01	*	.78			.27	.04				.16	.13	.16			.42		.52				.17		.13			3.92
Spot Pond	do		.44	.27				.85	.37		.11	.03	.09			.02	.10	.09	.04		.19	.03		.16				.01		.14		.55	3.49
Springfield	Connecticut			.37		T.		.16	1.29			.11	.21				.10	.20	.02			.21		.41				.01		.08		T.	3.17
Sterling	Merrimack			.51				*	.81				.26					*	.37			.25		.36						*	.12	.33	3.01
Taunton	Coast	.25		.91	T.		T.	*	1.08			.27	.09				*	*	.42			.45		.45	T.			.15		T.	T.	.36	4.43
Turners Falls	Connecticut			.44				.23	1.17			.14	.06					.6	.14			.20		.31				.06			.26		3.61
Westboro	Merrimack	T.		.50				*	1.40				.10					.2				.10		.05				T.		*	.15	.37	2.87
Williamstown	Hudson			.11	.01		.09	.26	.65			.03	.21				T.	.65	.28	T.		.35		.28				.06	T.	.01	T.		2.99
Winchendon	Connecticut			.25			T.	.20	.75			.08		.10				.48	.14			.19		.30				.02		.11			2.62
Worcester	Coast			.56	T.	T.	.02	.10	.47			.11	.46				.02	.21	.28			.16		.11	.02			.04		.04		T.	2.60
Rhode Island.																															
Block Island	Coast	.40		1.08				.38	.26			.23	.01					.13	.15	.38		.02	.30		1.12	T.			.26		.03		.50	5.25
Bristol	do	.25		.84				*	.62			.18	.06					.15	.11	.10			.32		.79				.14		.02		.60	4.18
Greene	do	.06		.59				*	.75			.17	.08					.11	.15	.08			.36			.50			.19		.24			3.28
Hope Valley	do	.15		.73	T.			T.	.58			.21	.09					.25	.19	.12			.49		.95				.55		.08	.32		4.71

TABLE 2.—*Daily precipitation for January, 1913. District No. 1*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Rhode Island—Con.																															
Kingston	Coast	.20		1.02				.20	.45			.26	.15				.36	.20	.23			.65		.38				.37		.13		.10	4.70
Narragansett Pier	do	.31		1.01				.25	.38			.28	.07				.24	.21	.27			.41		.47	.32			.40		T.	.03		4.65
Pawtucket	do	.11		.72				*	.84			*	.19				*	.23				.30		.39				.07		.20		.05	3.10
Providence	do	.10	T.	.59			T.	.18	.54			.13	.04				.06	.11	.09		.05	.34		.37				.10		.14	.02	.04	2.90
Wallum Lake	do			.48			.05	.65	.55			.25	.25				.30	.10	.08					.82						.10		.97	4.60
Connecticut.																															
Bridgeport	Coast			.54	.01			.30	.35			.34	.13				.42	.31	.22		T.	.10		.43	.03			.28		.20			3.66
Canton	Connecticut			.42		T.	T.	*	1.13			.15	.30				.12	.15	.13		T.	.14		.37				.07		.12			3.10
Colchester	Coast			.63	T.			*	.75			.16	.12				.12	.22	.12			.50		*	.52			.29		T.	.20		3.63
Cream Hill	Housatonic			.39			.04	.17	.76			.09	.60				.19	.12	.15	.08				.16				.13		.10			2.98
Danielson	Coast			.57				*	.90				.41					*	.51			.51			.40			.17		.20			3.67
Falls Village	Housatonic			.44			.02	.45	.80			.20	.51				.16	.05	.33		.17			.42				.16		.02		.29	4.02
Hartford	Connecticut	T.		.37	T.	T.	T.	.39	.64			.08	.17			T.	.13	.16	.04		.04	.10		.30				.04		.08		.28	2.82
Hawleyville	Housatonic			.66					.84			.25	.30				.17	.26	.07		.10			.34	.04			.23			.17		3.43
Lake Konomoc	Coast			.82					.65									.65							1.35				.40		.65		4.52
New Haven	do	.01		.68	T.		.01	.32	.33			.31	.08			.06	.28	.30	.14		T.	.09		.42	.05			.20		.21		.15	3.64
New London	do	.03		.60	T.			.25	.35			.21	.05				.26	.09	.15			.18		.55				.22		.23	.22	.30	3.69
North Grosvenordale	do			.56				.05	1.21			.15	.35				.07	.16	.25			.39		.23	.10			.05		.13			3.70
Norwalk	do			.57				*	.68			.27	.12				.36	*	.66		.12			.38	.06			.27		.18		.26	3.93
Southington	do	T.		.55				T.	.80			.30	.30				.05	.20	.10	.05		.20		.25	.05			.10		T.	.15		3.10
South Manchester	Connecticut			.42			.01	.95				.15	T.				*	.31			*	.24		.38				.27		.07		.11	2.91
Storrs	Coast			.47				*	1.00			.21	.19				.18	.20	.85			.37		.27				.13		*	.08		3.95
Torrington	Housatonic			.27	.20				*	1.60	.40	.14	.05	.34			.14	.18	.02	.15		.31			.37				.12		.06		3.35
Voluntown	Coast	.08		.60				*	.78			.16	.08				.20	.16	.10			.43		.64				.26		*	.37		3.86
Wallingford	do		.50	.05			.05	.40	.35		.24	.07	.10			.15	.20		.09		.17		.40				.15	.08			.23	3.23
Waterbury	Housatonic			.50				.11	.76			.23	.18				.16	.25	.08			.22		*	.28			.12		.12			3.01
West Simsbury	Connecticut																														
New York.																															
Addison	Susquah'na			1.18	T.		.14	.15	.40			.12	.33				T.	.15	.14		.03	.20		.11				.01		.02		.02	3.00
Albany	Hudson			.32	T.	T.	.11	.08	.62			.08	.03			T.	.01	.47	.07	T.		.24		.03				T.	T.	T.		.14	2.20
Alfred	Susquah'na			1.04		.20	.12	.14	.80			.18	.29	.08			.14	.41	.31					.62				T.				.04	4.37
Amsterdam	Mohawk			.35	T.		*	*	1.15			.15	.12				T.	.80	.40					T.									2.97
Athens	Hudson			.42				T.	.67			T.					T.	.08	.05		.25			.14					.02			.29	1.92
Bainbridge	Susquah'na			.13	.40	T.	.02	.42	1.30	.27	T.	.47	.41	.16			.12	.38	.22	.36		.52			.32			.11	.08		.04		5.73
Ballston Lake	Hudson			.40	T.		*	.36	.66			.17	.05					.65	.25			.33		.08	.03			.01	T.	*	.04		3.03
Bedford	Coast			.50				.22	.46			.29	.18				.31	.30	.16	.20		.25		.31				.18		T.		.08	3.44
Beerston	Delaware			.66	.14		.22	T.	1.43			.35	.40				.06	.40	.47			.28		.21				.08		T.			4.70
Binghamton	Susquah'na			.53		T.	.37	.28	.52		T.	.26	.16			T.	.03	.17	.19		T.	.16		.08				.04	T.	T.		.09	2.88
Bouckville	do			.97	.25		.15	.24	.23			.15	.14				.09	.30	.30	.16		.22		.18				T.	.20		.10		3.68
Carmel	Hudson			.67			.04		.82			.31	.28				.20	.35	.10			.11			.27			.19		.09			3.43
Chatham	do			.20	T.		T.	.16	.86			.09	.12					.17	.05			.25		.05				.03		T.	T.		1.98
Cooperstown	Susquah'na			.53	.05		.40	.70				.42	.30			.07	.33	.25	.38		.42			.20				.12				.29	4.46
Corinth ‖	Hudson			.72	.11	.20	.62	.20					.26					.35	.15			.30			.85						.18		3.94
Cortland	do			1.00	.28		.30	.47	.34	.02		.45		.48			.04	.47	.27	.03		.25		.03				.03	.01				4.47
Cutchogue	Coast	.09		.69	T.			.53	.44			.07	.05				.88	.33	.61			.38		.74	T.			.77		.24			5.82
De Ruyter	Susquah'na			.98	.21		.47	T.	.62	T.		.47	.43				.03	.59	.40	.08	.03	.55		.37	T.			T.	T.	T.	.11	T.	5.34
Elmira	do			1.38		T.	.16	.37	T.			*	.31					.11	.01		.38			.02				.40		T.		T.	3.14
Glens Falls	Hudson			.62	.03		.22	.10	.74			T.	.10					.32	.41	T.		.29		.64						.15	.04	T.	3.66
Gloversville	Mohawk			.55	.30		.35	.27	.82			T.	.24				T.	.98	.49	.18		.21		.48				T.	.05	.06	.09	T.	5.07
Greene ‖	Susquah'na			.50	.35		.10	.45	1.06			.38	.30	.05			.16	.28	.18			.39			.25								4.39
Greenfield Center	Hudson			.65			.31		1.00			.10	.30					.75	.62		.32			.47				.05		.18		.13	4.88
Griffin Corners	Delaware																																
Hancock ‖	do			.65	.20			.10	1.20			.37	.27	.10			.11		.31			.25			.22				.09		.02		3.89
Haskinsville	Susquah'na			1.15			.35	.25	.35								.10	.20	T.	T.	T.	.10		.15				.04	.03			T.	2.72
Homer	do																																
Hoosick Falls ‖	Hudson	.05		.08	.22	T.		.20	.80	.08		.16	.03	.08				.28	.15	.09		.61			.07				.10		T.		3.00
Indian Lake	do			.60	.20		.40	.41	.60			.08	.05					.15	.80		.05	.90		.30	.15						.10		4.79
Jeffersonville	Delaware			.65	T.	T.	.03	*	1.60			.40	.21				.21	.34	.18			.23		.37				.04		.08			4.34
Liberty	do		.32	.60	T.	T.	.07	1.35	.10		.05	.12	.03			.15	.44	.08	.25		.20	T.		.27				.10	T.	T.			4.13
Little Falls	Mohawk			.36	.45		.60	.30	.70			.19	.37				.03	.83	.37	.15		T.		.38				T.	.13	.05			4.91
Mechanicsville	Hudson		.20	.12	T.	T.	.28	.79			.09	.03					.28	.23	.17		.25			.03			T.					.10	2.57
Mohonk Lake	do			.82				*	1.58		*	.23	.15				.11	.37			.20			.40							.10		3.96
Morehouseville	Mohawk			.95	.36		.85	.50	1.05			.11	.65					.95	.60	.01	.03	1.08		.75	.20			.03		.12	.45	.20	8.39
Morrisville	Susqu'hanna			.26			.12	.35	.30			.17	.40	.18				.40	.35				.45							.10			3.08
Mount Hope	Coast			.77				.42	1.17			.66					.52	.47	.22					.82				.77					5.82
Mount McGregor	Hudson				.67				1.30											.60			.65				.05		.20		.15	3.62
Newark Valley	Susqu'hanna			1.25			.31	.08	.03			.77						.20	.38		.01	T.		.28				.03		T.		.03	3.37
New Berlin	do			.30	.65	T.	.03	.42	1.02	T.		.27	.27	T.			T.	.35	.30	.35			T.	T.	.15			T.	T.		T.		4.11
New Lisbon	do			.60	.14		.21	.20	.83	T.		.27	.43					.55	.42	.01		.34		.18				.07				.08	4.33
New York City	Coast	T.	T.	.40			.01	.24	.21			.15	.01			T.	.22	.18	.20		.01	.04		.46	.22	T.		.22		.09		.11	2.77
North Creek	Hudson			1.27			*	*	1.22				.27					.16	.32			.38		.40						.20		.23	4.45
Northville‖	do			.71	.18		.35		1.11			.11						.60			.80			.56						.16			4.58
Norwich‖	Susqu'hanna			.14	.77	.03	T.	.50	1.08	.05		.31	.30	.27			.09	.43	.29	.43		.33			.34			T.			.08	.21	5.65
Oneonta	do			.29	.10		.22	.32	.73			.24	.44				.07	.52	.21			.38		.19				.06				.14	3.91
Oxford	do			.64	.30		.33	.33	1.05			.42	.55				.15	.55	.75	.01		.35		T.						.05	.15		5.63
Oyster Bay	Coast			.43					.55			.19	.03				.38	.10	.24			.07		.31	.23			.39					2.92
Port Jervis	Delaware			.69				.23	.80			.30	.21				.14	.31	.09		T.	.14		.30	.03			.10		.07		.16	3.57
Roslyn	Coast		.54	.01				.21	.38			.29					.33	.24	.32					.45	.24	.12		.44		.05	.07		3.69
Salisbury	Mohawk			.87	.18		.61	.22	.78			.46	.63				.26	.74	.41			.21		.46					.11	.04		.07	6.05
Scarsdale	Coast	T.		.75			T.	.25	.45			.27	.30				.28	.32	.35		.10	.15		.20	.10			.35		T.	.10		3.87
Setauket	do	T.		.50		T.		.35	.30			.20	T.				.28	.32	.35		T.	.14		.58	.05	T.		.42		.05	T.	T.	3.54
Sherburne‖	Susqu'hanna			.16	.64	.04	T.	.49	.67	T.		.29	.33	.10			T.	.35	.25	.40					.58						.08		4.38
Southampton	Coast	.15		.67	T.			.31	.47	T.		.26	.04				.19	.28	.49	T.		.25		.30	.58	.06		.51	T.	.04	.33		4.93
South Edmeston	Susqu'hanna			.56	.15		.30	.23	.70			.26	.40				.04	.50	.39	T.	.03	.35		.19					.06	T.		.07	4.23
Spier Falls	Hudson		.35	.59		.05	.04	1.03	.11			.20	T.				.35	.07	.35		.32			.71		T.				.19		.05	4.41
Trenton Falls‖	Mohawk			.17	.82		.38	.63	1.00	.09		.15	.51	.19			.07	.72	.20	.30	T.	.38			1.55					T.	.05	.11		7.32
Tribeshill‖	do		‡	.90	‡		‡	‡	2.10			1.00	‡					‡	2.40										.10	‡			6.50
Utica‖	do			.41	1.00		.08	.65	.85			.25	.56	.14			.05	.44	.30	.08	.07	.09	.31										5.28
Wading River	Coast	.05		.61				.43	.50			.31	.03				.35	.30	.41			.44		.52	.31	.05		.52		.03	.07		4.93
Wappingers Falls	Hudson			.42	.14	T.	.10	.18	.72			.48	.24				.29	.10	.24			.10		.75				.15		.15		T.	4.06
Warwick	do			.42				.25	.50			.20	.27				.14	.16	.20			.10			.22			.10		.14		.26	2.96
Waverly	Susqu'hanna			1.35	.02		.08	.07	.43			.23	.18				T.	.12	.16	T.	.01	.16		.16				.02	T.	.02		.01	3.02
West Berne	Mohawk			.37				T.	.12			.09	.05					.17	.22					.11					.10				1.23
West Point	Hudson			.56				*	1.23			.44	.04				.62							.38	.26			.47		.09			4.09
Windham	Mohawk			.43	T.		T.	.05	.85			.12	.20	T.			.07	.26	.13	.06		.22		.28				.07	T.	T.	T.	.20	2.94

TABLE 2.—*Daily precipitation for January, 1913. District No. 1*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Pennsylvania.																																	
Allentown‖	Lehigh		.70	.46	.02			.52	.15			.25	.24				.05	.35	.05	.15	.18			.27	.02		.05	.24		.03		.21	3.94
Altoona‖	Susqu'hanna		.25	.35			.45	.30			.42	.02	.05			.05	.28	.12	.17		.18			.49				T.		.31	.30	.05	4.39
Ansonia‖	do			.54	.75			.19	.80	T.		.16	.26	T.			T.	.22	.07	.37		.27	T.		.11			T.		T.	.06		3.80
Austin	do			.87		.13	.56	.40	1.11			.46	.40				.05	.72	.40		.16			1.21				.16		.10		.14	6.87
Bethlehem	Lehigh			.79				.10	.63			.29	.35			.09	.38		.16		.17			.44	.05			.44		.09		.22	4.22
Bloserville	Susqu'hanna			.80		.02	.21	.08	.59			.17	.14				.11	.20	.15		T.	.06		.10	.16	.03		.10	T.	.28		.18	3.38
Browers Lock	Schuylkill			.70					.52				.70						.90			.24						.54		.06		.24	3.90
Catawissa	Susqu'hanna			.75			.05	.20	.49		.05	.27	.34			.04	.24	.02	.20		.08	.12		.30	.01			.14		.03		.35	3.68
Center Hall	do			.05		.02		.08	.40			.48	.14				.02	.35	.27					.20	.12			.10		.20		.37	2.80
Clearfield	do			1.30	.08	.21	.56	.41	1.00			1.07	.43				.20	.58	.72			.36	.29	.95	.10			.10	.08	.34		.12	8.90
Coatesville	Coast			.84			T.	.37	.25			.38	.15				.58	.13	.27			.40		.17	.08	.06		.42		.08		.10	4.28
Doylestown	Schuylkill			.98	.07			.21	.14			.24	.30				.49	.15	.34					.57	.10			.20		.06			3.85
Drifton	Susqu'hanna			1.10			.05	1.10				.50	T.					1.25	.13					.60				.25		.60		.15	5.73
Emporium	do			1.09	T.	.21	.38	.48	1.14			.61	.36			T.	.25	.68	.38		.21	.21		.77	.04			T.	T.	.15		.10	7.06
Ephrata	do			T.	.28	T.		.07	.12			.09	.19				.05	.12	.37			.07		.29	.17	.21		.19		.15			2.37
Everett	Juniata			.70			.42	.58	.06			.21					.35	.36	.09			.10		.12	.05			T.		.22		.04	3.30
Forks of Neshaminy	Delaware			.67				.35	.30			.12					.11	.42	.31			.15		.33	.07			.38		.02			3.23
George School	do			.55	.02			.28	.22			.12	.04				.15	.41	.14	.15		.20		.34	.02	.07		.42		.06			3.19
Gettysburg	Potomac			.86				.33	.18			.04	.15				.12	.18	.05					.10	.15	.20		.15		.20		.05	2.82
Girardville	Susqu'hanna			1.31	T.		T.	.40	.53			.45	.47			.04	.20	.24	.30		.08	.12		.40	.21			.26		.10		.44	5.55
Gordon	do			.83	.06			.16	.57			.29	.61				.05	.35	.17			.16		.41				.16		.06			3.88
Hamburg	Schuylkill			.86	.10			.55	.45				.27			.05	.20		.18		.05	.17		.19				.11		.08			3.26
Hanover	Susqu'hanna			.77				.31	.16			.04	.16				.24	.22	.04			.05		.12	.01	.16		.17		.01			2.46
Harrisburg	do			.77		T.	.03	.14	.44		T.	.24	.40			T.	.46	.09	.05		T.	.12		.26	.15	.01		.25		.16		.24	3.81
Huntingdon	Huntingdon			.43		.04	.23	.30	.50			.42	.38					.35	.20		.01			.42				T.		.46		.06	3.80
Hyndman	Potomac			.50	T.			T.				T.	T.				.25		.23					.18	.15			T.		.20		T.	1.51
Kennett Square	Coast			1.22				.51	.30			.15	.27				.33	.21	.14					.31	.05	.03		.51		.06		.07	4.16
Lancaster	Susqu'hanna			.32				.30	.21			.12	.16				.17	.38	.14			.10		.29	.15			.22		.30			2.86
Lansdale	Schuylkill			.69				.04	.20			.58	.05				.08	.44	.18			.14		.33	.09			.38				.35	3.55
Lawrenceville	Susqu'hanna			1.40			.05	.10	.10			.10	.10					.10	.15			.05	.05		.10					.05		T.	2.35
Lebanon	do			.05	.38		.20	.16	.33			.22					.10	.44		.05								.57		.20			2.70
Le Roy	do			1.20	.08	.02	.20	.10	.50			.10	.28				.01	.10	.21		.02	.15		.20				.05		.05		.08	3.35
Lewisburg	do			1.25		.05	.20	.30	.30			.35	.38					.42	.19		.02		.38					.03		.11		.12	4.00
Lloyd	do			2.00	.30	.20	.45	.34	.54			.25	.38				T.	.44	.60		.14	.03		.40	.14			T.		.01	.04	.05	6.23
Lock Haven	do			.85	T.	T.	.21	.26	.80			.41	.41				.05	.40	.25		.01			.58	.05			.01	T.	.02		.20	4.51
Marion	Potomac			.94		T.	.17	.30	.12			.13	.25				.24	.15	.11			.12		.06	.23	.15		.08		.50		.10	3.65
Mauch Chunk	Lehigh			.93	.13		.03	.13	.76			.29	.32				.04	.28	.12			.24		.33				.16		.09		.17	4.02
Mifflintown	Juniata			.99			.18	.09	.62			.23	.52				.01	.30	.15			.05		.25	T.			.06		.05		.15	3.65
Milford	Delaware	T.		.73	.03			.07	1.00			.16	.26				.10	.17	.04			.16		.32	.03					T.	.06		3.13
Montrose	Susqueh'na			.75	.20		.60	.10	1.50			.30	.35			T.	.20	.30	.25					.25				T.		.04		.10	4.94
Mountain House	Juniata			.40				.50	.65			.20	.29				.12	.24	.14	.05				.22				.12		.20		.05	3.18
Mount Gretna	Susqueh'na			.43		T.	.12	.16	.35			.22	.32				.24	.27	.09		T.	.07		.23	.19	.08		.31		.18		.20	3.46
New Germantown	do			.80				.35	.39			.15	.17		.05		.50	.25	.05					.24					.80	.90		.14	4.79
Ottsville	Delaware			.68				.17	.23				.31				.20	.37	.28			.21		.24	.09	.02		.28		.07			3.15
Philadelphia	do	.01	.01	.49			.01	.17	.09		T.	.10	.01				.65	.03	.18		T.	.14		.35	.06	.02		.51		.04	T.	.12	2.99
Pocono Lake	do			.72				.15	1.08			.29	.63					.20	.16			.13		.41				.10		.10			3.97
Point Pleasant	do			.73				.15	.21			.14	.15				.13	.40	.25			.16		.52	.12			.32		.06			3.34
Pottsville	Schuylkill			1.31			.09	.21	.63			.29	.34				.24	.22	.11			.09		.20	.02			.17		.09		.35	4.36
Reading	do			.77		T.	.03	.14	.44		T.	.24	.40			T.	.46	.09	.05		T.	.12		.26	.15	.01		.25		.16		.24	3.81
Renovo ‖	Susqueh'na			.40	.59		.07	.38	.76	T.		.49	.35	T.			T.	.47	.08	.26		.29			.58			T.	T.	.20	T.		4.92
Scranton	do			.47	.01	.05	T.	.42	.28		.01	.07	.25			.02	.07	.02	.02		T.	.20		.37				.02	.01	.01	T.	.20	2.50
Seisholtsville	Schuylkill			.96			.03	.11	.50			.26	.44				.15	.34	.18			.18		.26	.06			.34		.09		.20	4.10
Selinsgrove	Susqueh'na			1.36		T.	.08	.16	.44			.30	.31				.19	.10	.12		T.	.14		.32	.06			.12		.03		.04	3.77
Shawmont	Schuylkill			.90				.32	.10			.10					.25	.50	.18			.25		.32		.05		.60		.08			3.65
Shippensburg	Susqueh'na			.36	.54			.22	.12			.07	.34				.21	.17	.07			.16			.10	.42		.09	.10	.08	.13		3.18
Smiths Corners	Schuylkill			.69				.15	.20			.15	.13				.17	.40	.28			.27		.45	.14			.37		.07			3.47
Spring Mount	do			.65				.16	.11			.11	.12				.11	.40	.19			.11		.31	.07	.05		.27		.03		.34	3.03
State College	Susqueh'na			.82	T.	.12	.49	.16	.47	T.		.53	.33			.03	.21	.25	.24		T.	.10		.61	.06			.01	.04	.13	T.	.19	4.79
Stroudsburg	Delaware			.92		T.		.07	.79			.20	.26				.03	.22	.12			.14		.20		.06		.10		.08			3.19
Towanda	Susqueh'na			1.14	.03	T.	.14	.05	.33			.24	.23			T.	T.	.13	.18		T.	.21		.11				.10		T.	T.	.12	3.01
Weikert	do			1.47			.18	.18	.56			.33	.35				.08	.36	.16		.10			.37	.03			.08	.03	.09		.35	4.72
Wellsboro	do			1.28		T.	.20	.17	.65			.19	.30					.26	.52		.36			.56				.03		.04			4.56
West Chester	Coast			.93	.01			.49	.29			.13	.24				.31	.50	.31			.24		.30	.05	.04		.49		.07		.03	4.43
Wilkes-Barre ‖	Susqueh'na		.09	.26		T.	T.	.02	.63	.09		.14	.24	.15			T.	.18	.01	.08		.18			.36			.01	.01		T.		2.45
Williamsport ‖	do			.31	.95	T.	T.	.22	.80	.03		.19	.46	T.			T.	.23	.12	.17		.20			.55			.02		T.	T.		4.25
New Jersey.																																	
Atlantic City	Coast	.14		.74				.37	.23		T.	.26	T.	T.			.17	.02	.31		T.	.20		.61	.12	.11		.83		T.		.25	4.36
Bayonne	do			.40	.02			.26	.30			.17	.04				.16	.23	.34			.10		.60	.12	.10		.30		.20		T.	3.34
Belvidere	Delaware			.77				.10	.70			.24	.41				.11	.27	.10	.21		.17		.27	.08			.21		.11		.37	4.12
Bergen Point	Coast			T.	.02			.32	.32				.17				.13	.22	.40			.10		.60	.11					.22	.02		2.63
Boonton ‖	Passaic			.72	.05		.10	.43	.45			.24	.08	.30			.24	.25	.16	.11		.19			.36	.01		.05	.17		.12		4.03
Bridgeton	Coast	.10		.30				.18				.28	T.				.34	.12	.10			.15		.90	.10	.08		.70					3.35
Burlington ‖	Delaware	.05		.52	.03			.27	.22		.11		.05			.12	.53	.04	.14		.14	.02		.45	.08		T.	.51		.04			3.32
Cape May City	Coast	.13		.58			.10	.57	.24		.01	.18	.01				.14	T.	.26			.28		.08	.15	.05		.96				.48	4.22
Charlotteburg	Passaic			.85	T.								.50				.17		.26	.05	.11			.36				.20		.22		.32	
Chatham ‖	do			.70	.10			.10	.35	.35		.18	.05	.15			.10	.35	.20	.10		.22			.40	.10		.10	.15		.10		3.80
Clayton	Coast	.07		.40	T.			.20	.08			.45	.05				.35	*	.37			.25		*	.75	.13		.73		T.		T.	3.83
Culver's Lake	Delaware			.83	T.	T.		.04	.64			.17	.35				.05	.15	.08			.11		.20	.06			.14		.12	.01		2.95
Dover	Passaic			1.01				*	.72			*	.91				.20	.04	.29		.20	.26		.39	.01			.31	.15			.22	4.71
Elizabeth	Coast			.48	.05	T.	*	*	.59			.18	.05				.13	.27	.38			.13		.55	*	.21		.35		.16			3.53
Flemington	do			.74		T.	.03	.22	.31			.20	.16				.11	.39	.28			.20		.33	.08	.09		.38		.10	.09	.45	4.16
Haddonfield	Delaware	.07		.55		T.		.19	.10			.15	.01				.27	.39	.26			.27		.60	.05	.13		.61		.04			3.69
Hammonton	Coast	.08		.28				.16	.06			.18	.06				.30	.19	.18	.05		.13		.50	.42	.15		.63		T.			3.37
Hightstown ‖	Delaware			.20					.60			.50					.95					.15		.55				.55					
Highwood	Coast			.53			.02	.21	.40			.26	.12				.24	.27	.28		T	.20		.53	.03			.22		.10			3.41
Imlaystown	Delaware			.40													T.	.22	.26	.13		.14		.22									
Indian Mills	Coast	.09		.41				.21	.08			.15	.05				.25	.30	.12	.09		.16		.39	.35	.14		.73		.05			3.57
Jersey City	do			.48		T.	T.	.24	.31			.19	.04				.15	.23	.26		T.	.12		.51	*	.17		.23		.13		.16	3.22
Lakewood	do	.06		.48				.32	.11			.14	.03				.54		.18			.15		.56	.17			.44		.04			3.22
Lambertville	Delaware			.50	.01			.20	.30			.15	.10				.12	.40	.25			.15		.30	.03			.40		.06		.15	3.12
Layton	do			.76				.11	.82			.18	.24				.09	.14	.09			.22		.28	.03			.10		.05			3.11
Little Falls	Passaic			.79	T.	T.	.03	.29	.39			.25	.17			T.	.27	.30	.20			.12		.39	.05	T.		.18	T.	.20		.25	3.88
Long Branch	Coast	.06		.47	T.			.44	.67			.18	.07				.16	.36	.50			.28		.42	.03	.11		.54		.06	.07		4.42
Mahwah ‖	Passaic			.78	.15			.09	.48	.35		.25	.28	.27			.30	.28	.10			.16			.37				.17		.30		4.33
Moorestown	Delaware	.05		.46				*	.40			.15	T.				.23	.44	.17			.18		.41	.10	.10		.55		.04			3.28
Newark	Passaic			.69	.01		.03	.28	.20			.29	.20				.22	.15	.31			.20		.25	.18			.38		.24		.12	3.75
New Brunswick	Coast			.42	T.			.26	.37			.13	.02				.08	.34	.16			.12		.38	.23	.12		.41		.06			3.10
Newton	Delaware			.53	T.			.14	.52			.32	1.50				.10	.21	.14			*		.44	.09			.12		.16		.24	4.51
Northfield	Coast	.12		.66				.22	.13			.22					.21	.02	.28			.18		.57	.11	.17		.79				.12	3.80

TABLE 2.—*Daily precipitation for January, 1913. District No. 1*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
New Jersey—Contd.																															
Paterson	Passaic			.82	.04	T.		.11	.56			.22	.15				.19	.20	.22			.17		.35	T.			.17		.14	.04		3.38
Phillipsburg	Delaware			.68	T.	T.	.01	.29	.55			.27	.32				.08	.29	.33			.19		.27	.03	.02		.21		.06	T.		3.60
Plainfield	Coast			.63	.02	T.		.30	.31			.21	.06				.12	.30	.28			.16		.44	.20	.03		.36		.12		.21	3.75
Pleasantville	do	.12		.30	.36			.10	.10			.17					.17	.02	.34			.15		.63	.06	.14		.69				.25	3.60
Pompton Plains‖	Passaic			.61	.09			.06	.31	.29		.20	.12	.14			.15	.25	.13	.12		.17			.39	T.		.03	.08		.15		3.29
Somerville	Coast			.66				.15	.22			.17	.26				.14	.56				*		.48	.10	.06		.24		.10			3.14
South Orange	do			.60	.10	T.	T.	*	.40			.20	.12				.10	.20	.17		T.	.17		.38	T.	.05		.20		.14		.03	2.86
Sussex	Hudson			.60				.12	.70			.22	.25				.12	.20	.13		.11			.22	.05					.10			2.82
Trenton	Delaware	.02		.50		T.		.23	.22			.11	.02			T.	.17	.45	.17	.12		.16		.35	.02	.08		.37		.06	.07		3.12
Tuckerton	Coast	.13						.14	.11			.02	.14				.30	.21	.39		.05			.95	.04	.10		.76		.02		.59	
Vineland	do	.07		.09				.17	.06			.15	.01				.30	.10	.14			.04		.95	*	.11		.73		T.		.16	3.08
Woodbine	do	.15		.54				.24	.18			.36					.22		.45			.24		.22	.30	.22		.85	.02				3.99
West Virginia.																															
Bayard	Potomac			.40	1.00	T.	.75	.57	.59	T.		.30	.55	T.			.28	.08	.49	T.	T.	.25		.16	.16	.12		.16	T.	.25		.10	6.21
Burlington	do			.85	T.		*	*					.10					.20						.65			T.		.30			2.10
Harpers Ferry‖	do				.42			.31	.10								.52	.12	T.			.11				T.	.35		.40			2.33
Lost City	do			.61			.17	.14	.08				.14					.11				.13		T.	.14				.45		.10	.24	2.31
Martinsburg	do			.33				.40	.05		.08		.16				.43	.05			.05			.07	.13				.18		.20		2.13
Moorefield	do			.65				.67	T.		T.						T.							T.	T.				.25		.20	.07	1.84
Romney‖	do																.15	.05	.10												.17	.10	
Upper Tract	do			.35			T.	.20	.60				.60					T.	T.					T.	T.			.50		.10		T.	2.35
Maryland.																															
Annapolis	Coast		.55					.17	.23			.19	.01				.31	.02	.04			.12		.55	.11								2.30
Baltimore	do		.03	.28			.01	.10	.04		.01	.14	.06			.02	.56		.02			.06		.49	.04	.06		.48		.01		.04	2.45
Cambridge	do	.15		.22				.11	.29			.12	.16				.06		.39			.24		.15	.19	.10		.96					3.13
Cheltenham	do							.15	.14			.10	.07				.15		.10					.49	.17	.06		.78		T.			2.21
Chestertown	do	.70		.68				.30	.04			.38	.05				.38	.08	.09			.18	.78		.10	.08		.63		.02			4.49
Chewsville	Potomac			.75		T.	.13	.29	.10		T.	.05	.15				.52	.13	T.		T.	.07		.08	T.	.12		.29		.05		.16	2.89
Clear Spring	do			.31	.31		T.	.32	.25			.11	.13				.28	.14		.04	.06				.03	.19		.09	.06	*	.45		2.77
Coleman	do			.56				.25	.06			.20	.04				.37	.10	.05			.11		.64	.06			.57		.10		.08	3.19
College Park	do			.84				.32	.05			.27	.12				.31	.03				.09			.13	.04		.52		T.			2.72
Cumberland	do			.33	T.	.04	.33	.25	.03	T.	T.	.46	.21				.06	.06	.03	T.				.14	.17	.02		T.		.27			2.40
Darlington	Coast			.58	T.			.23	.15			.14	.05				.43	.25	.05			.09		.17	.06	.04		.55		.04			2.83
Denton	do	.10		.24				.04	.20			.13	T.				.16	T.	.20					.30				.80					2.17
Easton	do	.09		.32					.07								.17		.33					.38	.25			.85					2.46
Emmitsburg	Potomac			1.00				.31	.25		.24	.24	.19					.24	.09					.09	.06	.18		.30	.04	.35	.20		3.78
Fallston	Coast			.38	T.	T.		.11	.04			.14	.03				.40	.24	.04			.10		.17	.09	.02		.59		.03			2.38
Frederick	Potomac			1.06	T.	T.	.03	.27	.18			.11	.14				.46	.12	.04			.09		.04	.02	.06		.30		.10		.05	3.07
Frostburg	do			.33			.43	.15	.39			.26	.20				.12		.16			.08		.13	.23			.03		.29		.01	2.81
Great Falls	do			1.05	.12	T.			.32								.30	.15	.17						.39	.15		.28	.37				3.30
Green Sp'g Furnace	do			.48			.10	.45	.05			.05	.11				.30	.12	.13						.12	.09		.12		.42		.13	2.67
Keedysville	do			.58		T.	T.	.24	.06			.03	.10				.25	.12	.03			.11		.02	.02	.08		.30		.20		.09	2.23
Lake Montebello	Coast			.24				.11	.06			.20	.01				.56		.01			.05		.51	.04	.01		.51		T.			2.31
Laurel	do			.72				1.00	.20				.10				.35		.05					.51	.09	.05		.60		.04			3.71
Leonardtown	do	.05		.65				.26				.06	.04						.15				.03	.10	.20	.05		.93		T.			2.52
Monrovia	Potomac			.60				.28	.14			.14	.13				.52	.11	.02			.06		.67	.05	.08		.67		.03			3.50
Pokomoke City	Coast			1.25			.35		.24			.10							T.			.17			*	.58		.90		T.		.22	3.81
Porto Bello	do																															
Princess Anne	do	*.21		.94				.93	.11			.18	.04						.16			.38		.30	.35	.08		.89				.05	4.62
Rockville	Potomac			.74								.54						.42				.04			.40			.44		.02			2.60
Salisbury	Coast	.22		.86				.68	.26		T.	.14	.04					.01	.21			.36			.16	.24	.22	1.09		T.		T.	4.49
Solomons	do	.08	T.	.30				.21	T.			.05	.02		T.		T.		.14			.06		.14	.25	.04		.86		T.		.09	2.24
State Sanitorium	Potomac			.75				.32	.21			.03	.18				.29	.15	.16			.09		.05	.01	.12		.44		.20		.05	3.05
Sudlersville	Coast	.06		.68				.26	.05			.25	.04				.38	.05	.11			.12		.76	.17	.06		.38		T.			3.57
Takoma Park	do			.60	.25			.06	.21			.30		.12	T.		.38	.05	.08			.08			.58	.09		.25	.35		.05		3.45
Towson	do			.43				.13	.04			*	.23				.42		.18			.11		.18	.08			.48		.01			2.29
Van Bibber	do			.46				.16	.08			.22					.58	.08	.13		T.			.69	.04	.03		.64		T.			3.11
Westernport	Potomac			.08		.40	.60		.22			.34					.32	.05	.03					.26	.19						.40		3.29
Westminster	Coast		.05	.91				.34	.09								1.12							.05				.22		.03			2.81
Woodstock	do			.83				.12	.10			.19					.25	.43	.04		.01	.04		.12	.08			.61		.01			2.83
Delaware.																															
Delaware City	Coast	T.		.68	T.			.47	.43			T.					.22	.26	.09		T.	.08		.53	.12	T.		.52	T.	T.			3.40
Dover	do			.40				.06	.30			.20	.06				.30		.20			.02		.40	.50			.69				T.	3.13
Milford	do			.55				.11	.20	T.		.23	.05				.17	T.	.35			.36		.15	.06	.21		.85					3.29
Millsboro	do	.23		.70				.40	.07			.17	.08				.03		.40			.38		.22	.40	.08		.82		.01		.11	4.10
Seaford	do	.18		.22				.42	.28			.18	.04				.09		.42		T.	.18		.05	.15	.15		.84		T.			3.20
Wilmington	do							.14	.02				.12				.31	.33	.12			.10		.43	.07			.53		.05		.02	2.24
District of Columbia.																															
Washington	Coast		.09	.58			.05	.23	.10		.03	.13	.12		T.		.26		.03			.06		.48	.11	.01		.53		T.		.04	2.85
Virginia.																															
Culpeper	Rap'han'k			1.07				.15					.08											.33	.34			.60		.05			2.59
Dale Enterprise	Shenandoah			.66			T.	.18	.23		T.								.07			.02		.13	.15	.15		.62		.20		.01	2.42
Eastville	Coast	.60		.62					.15			.04	T.	.01								.08			.45	.40		1.04				.20	3.59
Fredericksburg	Rap'han'k			.44				T.	.01			T.	.04				T.		.09			.04		.28	.19	.01		.85		T.			1.95
Lincoln	Potomac			1.99		.02		.26	.16								.38	.04				.10		.06	.07			.60			.09		3.77
Mount Weather	do			.52		T.	.03	.17	.09		.05		.09				.28	.03	T.		.06	.05		.14	.05	.04		.54		.06		T.	2.20
Quantico	do			.11					.17				.08						.03					.17		.72			.36				1.64
Staunton	Shenandoah			.68				.22	.08			.01	.19					.05	T.					.19	.15			.80		.08		.20	2.65
Warsaw	Rap'han'k			.80				.05				T.							1.10						.50	.37		1.10					3.92
Winchester	Potomac			.35				.35									.72					.15						.53		.03			2.13
Woodstock	Shenandoah			.32			T.	.28	.03			T.	T.	0			.04		.04			.02		.03		.12		.51		.03		.07	1.49

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 1, North Atlantic States.*

Date.	Maine.												Concord, N. H.		Massachusetts.								Providence, R. I.		Connecticut.			
	Eastport.		Greenville.		Orono.		Portland.		Presque Isle.		Rumford Falls.				Amherst.		Boston.		Middleboro.		Nantucket.				Cream Hill.		Hartford.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	41	29	37	25	46	29	46	34	35	31	41	28	45	28	46	30	52	37	50	38	49	38	50	34	41	27	47	35
2	40	25	33	22	44	18	42	27	37	11	37	20	40	19	44	24	51	34	48	20	48	33	47	31	40	28	52	29
3	52	40	48	29	50	33	51	38	44	29	50	30	57	32	60	32	62	35	58	38	54	42	58	32	55	33	60	31
4	45	26	48	15	58	24	38	32	48	20	37	27	37	31	39	32	42	34	52	38	42	36	42	32	41	27	39	31
5	27	16	20	10	38	15	35	26	21	10	28	18	35	29	37	29	41	32	40	28	41	35	39	31	33	20	38	30
6	38	15	24	10	34	15	40	26	16	6	30	20	34	29	49	32	62	34	59	29	55	38	61	34	51	24	55	33
7	36	15	32	10	31	19	42	18	18	8	37	16	41	24	51	32	55	32	55	37	51	40	55	34	46	38	54	35
8	31	5	15	3	29	8	24	11	18	− 1	18	10	30	11	36	16	39	17	53	33	52	25	50	20	50	22	43	17
9	9	−2	7	−11	39	−5	18	7	13	−12	14	−3	19	5	27	11	24	13	39	12	25	19	24	13	22	4	26	12
10	31	9	30	− 9	27	−4	35	13	25	−13	22	−8	36	8	37	18	43	22	42	8	44	25	42	21	35	13	41	21
11	34	24	28	16	27	1	34	24	23	17	30	10	37	26	43	33	49	38	46	35	50	41	49	38	39	30	49	36
12	48	15	34	15	46	26	53	17	33	20	39	10	57	21	55	20	61	28	55	41	55	30	58	23	55	26	57	21
13	15	−2	16	−15	38	−5	18	6	21	−18	13	−1	21	7	23	13	28	15	41	14	30	23	23	15	26	7	24	15
14	26	4	25	− 7	22	−5	27	12	11	− 9	33	1	32	11	35	14	32	20	36	14	33	30	35	19	32	10	35	17
15	41	26	32	8	35	4	41	23	31	9	36	5	38	18	41	26	44	29	41	20	46	32	43	28	37	20	43	28
16	42	34	39	22	39	24	47	36	40	24	43	24	48	31	46	35	50	42	46	38	45	39	48	40	42	34	48	39
17	44	34	35	27	42	23	46	38	47	23	36	33	46	31	50	35	59	41	55	30	50	39	56	39	46	39	56	41
18	47	41	48	34	46	31	52	43	45	33	38	32	52	41	51	39	56	46	51	45	50	44	55	44	50	34	54	42
19	44	13	40	10	46	25	44	28	37	13	40	21	42	26	42	26	47	34	52	34	44	36	45	31	36	28	42	31
20	38	12	20	4	30	12	43	21	17	−10	29	16	43	22	48	24	49	31	47	19	47	33	50	29	44	21	51	27
21	48	16	40	10	48	9	51	22	38	17	38	16	55	20	54	23	59	27	58	33	53	32	57	28	40	28	55	26
22	30	13	27	8	32	14	36	20	24	− 1	31	16	36	19	38	19	41	26	39	15	40	29	39	23	38	10	40	21
23	43	26	32	8	37	16	42	24	24	− 4	36	18	36	18	45	22	53	32	43	15	54	31	52	27	40	22	49	27
24	44	31	38	21	44	33	45	33	36	23	41	23	45	30	42	31	52	42	52	40	49	40	50	39	38	34	48	37
25	37	21	29	9	40	21	41	29	32	10	35	12	40	24	43	27	48	35	48	28	48	35	46	32	40	26	43	33
26	40	19	27	12	41	18	44	28	25	− 4	34	22	48	25	50	28	54	34	51	22	49	35	53	32	49	27	54	30
27	44	14	35	12	43	30	46	19	38	19	40	15	47	19	43	25	51	25	49	36	48	31	49	28	40	24	45	26
28	23	8	17	2	36	8	30	17	20	−15	24	14	29	17	32	20	36	24	36	12	35	27	34	23	36	12	34	23
29	23	0	15	−13	27	−2	33	8	13	−24	19	0	24	10	30	16	36	18	35	14	37	30	35	19	24	14	35	20
30	35	23	34	8	36	13	38	22	29	− 2	35	16	40	22	43	26	48	34	44	30	49	37	43	31	42	21	44	28
31	47	31	40	26	48	26	49	24	42	22	36	20	59	24	56	30	62	40	59	33	55	43	60	38	55	29	57	39
Mns.	36.9	18.7	30.5	10.4	38.7	15.3	39.7	23.4	29.1	7.5	32.6	15.5	40.3	21.9	43.1	25.4	47.9	30.7	47.7	27.4	46.1	33.8	46.7	29.3	40.7	23.6	45.7	28.4

Date.	New Haven, Conn.		New York.												Pennsylvania.												Atlantic City, N. J.	
			Addison.		Albany.		Binghamton.		Indian Lake.		Little Falls.		New York.		Everett.		Harrisburg.		Philadelphia.		Scranton.		State College.		Wellsboro.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	50	37	45	27	44	31	40	29	39	24	41	30	50	39	48	27	50	31	53	39	43	29	44	31	45	24	52	39
2	52	30	48	23	45	27	47	28	35	0	38	25	51	38	51	23	50	31	56	34	50	28	47	28	47	23	52	36
3	58	32	44	29	61	34	53	32	49	18	41	33	57	29	40	25	54	29	62	29	59	28	42	25	43	32	57	30
4	38	33	35	26	39	31	33	27	45	20	35	26	37	31	36	24	39	29	41	32	34	28	29	18	35	25	45	33
5	40	31	36	19	35	29	34	23	25	15	28	21	40	30	33	23	36	31	40	33	36	26	29	18	29	19	46	35
6	57	36	42	28	48	31	49	34	40	17	44	25	56	39	41	26	47	31	58	37	49	36	37	28	41	26	54	46
7	55	38	46	29	48	23	47	34	41	20	44	28	56	40	56	36	49	40	58	47	47	41	40	34	42	30	55	48
8	46	23	66	21	40	13	57	17	39	10	35	11	53	24	56	28	55	26	62	27	59	19	56	24	55	24	59	28
9	30	14	33	13	23	10	28	12	20	− 6	20	2	29	18	34	8	30	20	32	22	30	15	28	12	31	12	32	22
10	42	24	40	22	36	22	38	22	29	8	35	14	39	27	40	13	36	24	42	26	38	23	37	18	37	20	43	27
11	48	36	49	34	44	35	48	34	39	17	40	30	54	36	43	32	42	34	60	37	44	33	45	32	42	32	53	43
12	55	21	50	22	53	17	53	16	44	20	45	15	61	24	49	14	52	27	62	29	53	21	57	22	51	25	63	33
13	28	15	30	11	22	14	26	12	21	0	27	13	28	20	34	15	31	23	31	23	33	17	30	14	29	14	33	23
14	36	19	43	13	33	17	38	17	37	−10	40	24	37	24	45	16	38	23	39	25	39	19	41	19	43	15	40	26
15	44	28	42	28	40	27	44	27	39	0	40	24	43	28	51	18	44	27	47	29	44	27	45	23	40	26	46	31
16	49	38	46	39	44	37	46	41	40	31	40	37	47	38	50	20	44	36	50	39	47	38	47	23	44	37	51	44
17	54	40	57	41	48	39	54	44	45	33	48	37	59	45	60	36	51	40	63	47	54	42	54	42	54	39	51	44
18	53	42	60	42	55	37	53	33	49	34	49	39	56	42	61	41	58	41	58	34	57	37	55	36	54	38	57	45
19	45	32	46	30	38	28	33	30	45	20	43	27	44	35	49	26	46	36	48	38	43	32	43	28	48	29	49	35
20	54	29	50	30	51	27	57	31	36	14	46	24	56	37	56	32	57	34	60	37	58	33	52	31	45	28	52	40
21	54	27	53	24	57	25	57	22	48	15	52	20	60	28	56	27	58	30	61	31	59	23	55	23	43	25	56	29
22	40	23	44	21	38	23	37	21	29	10	32	17	41	26	42	17	42	25	43	30	41	21	39	20	42	19	44	26
23	48	28	43	22	43	27	46	26	31	15	44	23	50	34	47	24	44	32	46	33	45	28	45	28	40	23	52	34
24	47	41	46	34	43	31	45	31	42	26	45	31	47	40	54	37	47	39	51	41	42	35	51	35	47	32	52	43
25	49	35	46	25	40	27	40	29	31	10	35	28	50	39	51	32	50	38	52	40	42	35	46	29	45	26	53	41
26	53	32	55	30	49	31	51	38	43	15	48	26	53	37	58	26	57	34	57	36	53	34	55	35	52	28	51	42
27	45	31	50	25	47	25	50	23	42	13	46	20	45	28	39	28	48	30	47	35	46	23	48	25	47	26	45	34
28	36	24	35	21	32	23	28	20	20	5	23	19	36	25	35	25	37	27	39	30	30	23	32	22	32	20	38	29
29	34	23	32	19	30	12	34	18	21	− 6	34	17	40	28	33	28	34	26	37	29	35	23	30	23	32	19	43	29
30	44	29	51	29	44	30	50	34	35	15	40	32	48	30	54	24	46	30	53	30	52	32	48	22	52	28	49	38
31	55	37	54	39	58	35	57	32	47	17	50	33	59	43	56	31	58	37	62	42	58	37	51	33	50	37	53	46
Mns.	46.4	29.9	45.7	26.3	42.8	26.4	44.3	27.0	37.0	13.5	39.6	24.2	47.8	32.3	47.0	25.2	46.1	31.0	50.6	33.9	45.8	28.6	43.8	25.8	42.8	25.8	49.2	35 5

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 1*—Continued.

Date.	New Jersey.										Martinsburg, W.Va.§§		Maryland.								Millsboro, Del.		Washington, D. C.		Virginia.					
	Atlantic City.		Bridgeton.		Phillipsburg.		Sussex.		Trenton.				Baltimore.		Darlington.		Frederick.		Westernport.						Fredericksburg.		Staunton.§§		Woodstock.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	52	39	53	35	48	27	47	30	53	32	50	29	54	37	50	30	51	31	59	29	54	30	53	30	55	31	54	35	55	28
2	52	36	58	27	51	24	50	23	58	26	51	27	52	34	50	25	49	25	56	24	60	27	53	29	56	24	54	26	55	26
3	57	30	60	37	59	29	60	35	63	36	42	27	60	33	59	35	49	33	41	24	57	36	60	35	58	36	42	38	45	29
4	45	33	42	30	35	30	37	29	38	29	45	25	45	32	40	27	44	30	42	24	47	30	50	32	53	21	46	26	49	29
5	46	35	40	29	35	28	36	25	39	27	41	30	40	36	37	28	39	28	38	27	51	39	44	34	49	38	51	35	45	28
6	54	46	67	34	48	35	44	31	59	33	48	28	54	35	54	28	50	28	39	27	71	40	56	33	62	34	65	34	66	28
7	55	48	60	47	50	35	48	31	55	49	55	30	57	50	56	45	51	42	54	37	69	38	66	51	73	50	68	54	65	44
8	59	28	64	40	49	22	47	30	55	39	60	42	66	32	62	40	60	36	55	30	68	41	68	31	72	55	63	58	63	41
9	32	22	40	20	30	18	31	15	40	19	34	22	34	25	41	21	38	21	37	31	42	25	36	24	55	24	37	20	42	20
10	43	27	40	21	38	21	37	12	40	22	41	17	44	29	41	22	39	18	36	17	47	25	45	28	48	21	50	22	38	19
11	53	43	63	35	44	34	40	30	50	35	52	21	64	40	57	33	58	34	45	33	64	40	64	41	64	41	64	38	68	35
12	63	33	63	40	59	24	54	33	62	37	58	37	63	32	61	34	59	34	47	31	68	40	65	33	64	43	57	52	60	35
13	33	23	42	22	28	18	34	15	39	20	34	20	33	27	36	19	35	21	40	20	41	28	34	27	43	25	36	21	37	22
14	40	26	42	22	37	18	39	16	40	22	37	20	39	26	38	21	36	21	50	21	49	31	42	24	40	23	49	21	47	18
15	46	31	50	23	44	24	35	22	47	24	48	20	50	30	43	22	46	22	52	23	58	24	51	24	54	20	52	26	53	21
16	51	44	51	34	51	34	41	33	47	32	46	21	53	39	47	35	47	31	55	36	62	39	56	42	64	44	63	40	53	32
17	51	44	64	45	54	39	51	37	62	42	65	37	68	46	62	42	64	40	64	38	68	41	68	48	70	52	64	50	67	41
18	57	45	58	50	55	44	53	41	57	49	65	39	62	45	58	48	63	49	65	42	62	51	64	44	65	55	62	50	66	48
19	49	35	57	30	57	34	49	33	55	33	50	32	52	37	66	31	55	32	53	30	58	33	55	36	62	30	59	28	61	27
20	52	40	59	32	54	29	51	25	60	30	59	32	56	37	65	32	60	29	62	31	62	34	60	38	64	31	63	34	65	32
21	56	29	60	34	60	31	49	29	60	31	39	34	63	33	58	35	57	33	60	29	64	32	64	31	63	39	44	40	61	31
22	44	26	45	22	41	21	40	17	44	22	42	20	45	29	41	20	42	22	54	24	52	24	45	25	46	20	47	25	49	19
23	52	34	46	26	38	25	39	23	41	26	55	25	46	34	40	25	44	26	54	29	62	27	48	29	43	25	53	33	52	27
24	52	43	50	41	44	31	41	36	47	40	49	35	50	42	47	38	47	42	57	40	58	45	50	42	57	43	57	45	55	42
25	53	41	52	39	48	36	47	33	54	34	53	38	54	41	50	35	52	37	59	33	58	35	53	37	53	42	55	42	57	35
26	51	42	57	30	57	29	52	27	58	31	59	28	60	38	56	29	61	30	63	28	60	29	60	33	62	29	59	34	61	32
27	45	34	50	37	51	34	47	31	48	36	44	34	49	33	50	35	50	38	55	32	46	36	47	32	56	38	41	40	55	37
28	38	29	40	24	37	24	36	21	40	23	41	27	40	30	38	23	40	26	39	28	44	29	41	28	43	26	44	24	45	19
29	43	29	42	26	34	24	30	21	35	26	37	28	38	31	35	25	36	30	42	30	48	27	39	35	39	38	43	30	42	32
30	49	38	58	27	50	29	48	26	50	31	49	24	53	34	49	24	51	28	55	31	64	28	61	29	64	25	60	35	62	25
31	53	46	60	40	59	33	58	31	64	35	58	24	62	43	57	40	60	38	61	22	66	35	64	40	66	41	58	39	63	33
Mean	49.2	35.5	52.7	32.2	46.6	28.5	44.2	27.1	50.3	31.3	48.6	28.2	51.8	35.2	49.8	30.5	49.5	30.8	51.3	29.1	57.4	33.5	53.6	33.7	56.9	34.1	53.5	35.3	54.9	30.2

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 2, SOUTH ATLANTIC AND EAST GULF STATES.

CHARLES F. VON HERRMANN, District Editor.

GENERAL SUMMARY.

The first month of the new year was remarkably warm throughout the entire district. Near the coast line from Florida to Virginia the excess in monthly mean temperature was approximately 10°, and although it diminished gradually toward the west, it exceeded 6° even in the Mississippi area. In most of the Atlantic States during the past 50 years only January, 1890, was slightly warmer, and in the Gulf States January, 1907, was also somewhat warmer. With respect to precipitation, the month did not differ materially from the normal, except in Alabama and Mississippi, where more than the usual amount of rain was received; in fact, in the Mississippi area the month was the wettest since the establishment of the State climatological service in 1888. The amount of snowfall was very small. Other features of some importance were the destructive gales on the 3d, which caused considerable damage to property from eastern North Carolina northward; the lack of sunshine and frequency of days with dense fog in the Gulf States, and the unusually low atmospheric pressure on the 3d.

The sudden formation of a deep barometric depression in the central valley on January 2 resulted in the development of an unusually severe storm on the 3d over eastern Pennsylvania, the District of Columbia and Virginia, with a low atmospheric pressure of 28.90 inches at Lynchburg, Va., and Washington, D. C. From South Carolina northward the lowest atmospheric pressure for the month was recorded at all points on that date. Owing, however, to the development over northern Georgia of a similar but far less severe storm on January 27, the lowest pressure in the Gulf States occurred on the latter date, with a minimum of 29.45 inches at Atlanta. This storm was accompanied by heavy rains that caused high stages in the rivers of the South. The highest atmospheric pressure for the month occurred generally on the 14th or 15th, with a maximum of 30.76 inches at Richmond, Va.

The frequency of rains in the South and the generally cloudy or foggy weather were the only rather unfavorable climatic features of the month, which as a rule was exceptionally pleasant for the midwinter month. The great warmth, however, unduly advanced vegetation, and at the close of the month, even as far north as central and eastern North Carolina, peach and plum trees were in bloom and other trees were budding.

TEMPERATURE.

The mean temperature for the entire district was 53.7°, or 7.9° above the normal, and 12.5° higher than the mean for January, 1912. The greatest excesses occurred in Virginia and the Carolinas, and exceeded 11° at some cooperative stations, while in western Mississippi and northern Georgia the departure was slightly below +6° at a few stations. As a rule there were not at any time more than two or at most three consecutive days with temperatures slightly below normal; on the other hand, during the warmest weather, from the 6th to 8th and 16th to 25th, the positive departures at many places on some days exceeded 20°. The number of days with temperatures below freezing was quite small; in Georgia, for example, it was below freezing on one day at Augusta, on two at Macon, and on four at Atlanta (normal number 12). Very few days with frost were noted in Florida. There were no cold waves during the month, and the highest and lowest temperatures occurred on very irregular dates, the maximum about the 6th to 8th, 19th or 20th, and 24th, the minimum on the 9th or 10th, 14th or 15th, or near the close of the month.

At a large majority of stations the monthly mean temperatures ranged between 45° and 55°. The highest monthly mean was 74.1° at Key West, Fla., and the lowest 40.4° at Hot Springs, Va. The maximum temperature exceeded 80° in all States except Virginia, reaching 88° at De Funiak Springs, Fla., on the 19th. The minimum temperature for the district was 10° on the 9th at Columbia, Va.; elsewhere, except in extreme western North Carolina, the minimum temperatures did not fall as low as 20°.

PRECIPITATION.

The center of greatest total rainfall in the United States for January was over the lower Ohio and central Mississippi Valleys, or roughly, between Memphis, Cairo, and Louisville, and accordingly the largest amounts in District No. 2 occurred in northern Mississippi, Alabama, and Georgia, and extended as a narrow belt of diminished rainfall through central North Carolina. The State average for the Mississippi area was 7.83 inches, or 3.04 inches above normal, the greatest January average since 1888. The excess in Alabama was 1.89 inches, in North Carolina only 0.55. Elsewhere the precipitation was slightly below normal, with maximum deficiency of slightly over an inch in Florida. A very light fall of snow occurred in northern Alabama and Georgia on the 2d to 3d and over Virginia on the 29th, with the largest amount, 3 inches, unmelted, at Diamond, Ga.

The heaviest rains occurred generally in connection with the storm of the 26th to 27th, but the number of stations reporting excessive amounts in 24 hours was not large. The maximum fall in a brief period for the district was 4.00 inches on the 8th, a local downpour at Beaufort, S. C.

The average rainfall for the district was 4.19 inches or 0.55 inch above normal. The greatest amount was 11.26 inches at Booneville, Miss., followed by 9.84 inches at Newbern, Ala., and the least was 0.50 inch at St. Augustine, Fla., and Georgetown, S. C. The number of days with rain averaged 9, varying from 6 in Florida and Georgia to 13 in Mississippi.

The marked effect of even a moderate rise in altitude in increasing the rainfall is clearly shown by the difference in the precipitation received north and south of the "fall line" in Georgia during this month. The fall line extends southwest from Augusta through Macon to Columbus. The increase in the precipitation northward during the period from January 24 to 28 is revealed by the following contrasting records: Augusta 0.43 inch; Elberton, a few miles north, 5.12 inches; Macon, on the fall line, 1.17 inches; Atlanta 4.10 inches, and Columbus 0.93 inch to Newnan 3.25 inches.

MISCELLANEOUS PHENOMENA.

The prevailing direction of the wind was southeast in Florida, south in Georgia, Alabama, and Mississippi, and southwest in the Carolinas and Virginia. The wind movement was very large, the (average) hourly velocity

exceeding 10 miles at 9 of the regular Weather Bureau stations. An unusually large number of stations reported gales, with maximum velocities exceeding 40 miles an hour, especially on January 3. On that date the following velocities were reported: Richmond, Va., 61 miles from the southwest, Norfolk, Va., 64 southwest, Raleigh, N. C., 50 southwest, Charlotte, N. C., 47 southwest, Columbia, S. C., 56 southwest, Augusta, Ga., 42 southwest, Savannah, Ga., 58 west, Atlanta, Ga., 58 southwest, and Jacksonville, Fla., 46 southwest. At Cape Henry, Va., a velocity of 50 miles occurred on the 8th, at Hatteras, N. C., 63 miles west on the 4th, at Pensacola, Fla., 48 miles southwest on the 2d and 60 miles south on the 26th, and at Sand Key, Fla., 44 miles west on the 27th.

The amount of sunshine was generally below normal, except in southern Florida. The average number of cloudy days was 13, of clear days only half as many. The total number of hours of sunshine for the district (average of 20 regular stations) was 156, and the percentage of possible amount 49 per cent. The maximum percentage of sunshine in the district was 75 per cent at Miami, Fla., and the minimum 35 per cent at Atlanta, Ga.

Dense fogs were especially widespread from the 20th to the 26th, and thunderstorms were more frequent than usual for a winter month.

LOCAL STORMS.

[Pensacola, Fla., William F. Reed, jr., Local Forecaster.]

A secondary depression in southern Arkansas on the morning of the 2d moved northeastward and caused gales of 36 to 48 miles an hour in this locality with high seas. The auxiliary yacht *May*, of New Orleans, was beached about 2 miles west of Pensacola entrance, and the dredge *Caucus*, with two barges of coal in tow for St. Andrews Bay, was forced to return; one of the barges dumped its cargo in the high seas about 18 miles east of Pensacola entrance.

While a barometric depression was moving from southern Louisiana northeastward to northern Georgia on the 26th–27th high southerly winds of 36 to 60 miles an hour occurred at Pensacola. The maximum velocity—60 miles south—occurred at 10.29 p. m. of the 26th. The barkentine *Louisa* broke her hawsers at Baylen Street wharf and drifted to Pine Street, where she was left hard aground, but sufficient ballast was removed in a few days to float her. No other material damage resulted.

RIVER CONDITIONS.

The rivers of Virginia were low throughout the month, with maximum stages generally about the 1st and minimum stages toward the close of the month. In North Carolina, however, the highest stages occurred during the last week. On January 27 warnings were issued by the official in charge at Raleigh for a rapid rise in the Cape Fear, Neuse, Tar, and Roanoke Rivers to moderately high stages of short duration, which were verified by the following records: Cape Fear River at Fayetteville 35.5 feet January 29, Neuse River at Smithfield 17.8 feet 29th (flood stage 13 feet), Tar River at Greenville, 15 feet February 1 (flood stage 13 feet) and Roanoke River at Weldon 26.6 feet January 30. No property was damaged but a loss of possibly $3,000 resulted from the enforced suspension of work. Steamboat lines were enabled to move freight from the lower wharves and live stock was driven to higher land; the value of property saved was about $10,000.

In South Carolina flood stages were reached in the Wateree, lower Congaree, and Santee Rivers from the 28th to 31st. Warnings were issued and the losses did not exceed $2,000. Property to the value of about $10,000 was saved. The maximum stages were, in the Wateree at Camden 26.1 feet on the 29th (flood stage 24 feet), in the Saluda at Chappell 16.8 feet on the 26th (flood stage 14 feet), in the Santee at Ferguson 13.9 feet on the 31st, and at Rimini 15.6 feet on the 31st.

The report of the flood in the Pedee River by Mr. J. H. Scott, local forecaster at Charleston, S. C., is as follows:

Following a period of more than two months of continuously low stages, as a result of the heavy rains of January 24 and 25, the Pedee River at Cheraw, S. C., rose 21.6 feet in 24 hours to a stage of 23.8 feet at 8 a. m., of January 26. Following a fall to about 18 feet on the afternoon of the 27th, the river quickly responded to the heavy rains of the 27th, reaching a stage of 27.8 feet or 0.8 foot above the flood stage at 8 a. m., of the 29th. The river remained above flood stage at Cheraw only a few hours and had returned to normal conditions by February 1. In the lower portion of the river the rise continued during the first week of February with a crest of 13.4 feet at Smith Mills on the 6th.

Warnings were issued for the upper Pedee at 10 a. m., of January 27. The losses resulting from the flood were not large. The pumping station of the waterworks plant at Cheraw was temporarily put out of commission, and farming operations were suspended in the region subject to overflow. Cattle and hogs were driven from their winter pastures in the swamps to high ground upon receipt of the warnings. The losses sustained by enforced suspension of business amounted to about $1,000. Money value of the property saved about $30,000.

The heavy rains of January 26–27 caused moderately high stages in the rivers of Georgia without the flood stage being attained at any point. Owing to previous low stages warnings were issued for the rise, which were of value to logging interests on the lower courses of the rivers. The maximum stage in the Chattahoochee River at Norcross was 10.7 on the 28th, at West Point 16.7 on the same day, at Eufaula 26.5 feet on the 30th, and at Alaga 23.9 feet on the same day. The Savannah River at Augusta attained a maximum stage of 25.5 feet on the 26th; the Ocmulgee at Macon 13.3 feet on the 29th and the Oconee at Milledgeville 16 feet on the 26th.

Alabama.—Report by Mr. P. H. Smyth, section director, Montgomery:

Moderate to heavy rains in the watersheds of the rivers in the Montgomery district on January 26 caused the lower Coosa, Tallapoosa, and the upper Alabama to rise rapidly. Crest stages were as follows: Wetumpka 36 feet January 29, Montgomery 34.8 feet January 30, Milstead 32.2 feet January 28, and Selma 37.8 feet January 31. The flood stage was reached only at Selma; at Montgomery the crest was within 0.2 foot of flood stage. Accurate and timely warnings were issued on January 27. No losses resulted from the flood. The value of property saved was about $1,000.

High stages prevailed throughout the month in the Tombigbee River and its branches. The Black Warrior at Tuscaloosa rose above the flood stage on the 27th, reaching a maximum of 47.8 feet at 9 p. m. January 28, and fell below the flood stage on January 30. The Tombigbee River at Demopolis remained above the flood stage from the 15th to the close of the month, excepting on two days, and at the end of the month the river was 47.4 feet and rising.

The Pearl River at Edinburg, Miss., passed above the flood stage on January 27, at Jackson on the 25th, and at Columbia on the 26th, and continued above flood stages at the close of the month. The Chickasawhay was out of its banks at Enterprise from the 27th to 30th, and at Shubuta from the 27th to the close of the month. Maximum stages for the month were: Jackson 27 feet, Columbia 21 feet, Merrill 20.4 feet, all on the 31st; Edinburg 21.5 feet on the 30th and Shubuta 31.9 on the 29th. A more complete report on the floods in the rivers in Alabama and Mississippi will be made in the February review.

TABLE 1.—*Climatological data for January, 1913. District No. 2, South Atlantic and East Gulf States.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Virginia.																			
Arvonia	Buckingham	350	9	45.4	+10.8	72	7	19	15	38	2.30	− 0.93	0.90	0.5	10	12	12	7	sw.	Rev. Plummer F. Jones.
Ashland	Hanover	221	22	45.7	+ 9.5	74	7	22	15	35	1.68	− 1.03	0.76	T.	4	12	12	7	s.	E. L. C. Scott.
Buchanan	Botetourt	820	9	.....	.....	.....	.....	.....	.....	.....	2.65	− 0.81	1.06	0	11	.....	.....	.....	.....	D. D. Booze.
Callaville	Brunswick	250	19	48.6	+10.0	75	7†	20	15	37	3.25	0.00	1.00	T.	8	16	9	6	sw.	F. M. Gage.
Cape Henry	Princess Anne	20	39	50.8	+10.6	76	8	33	9	35	3.35	0.00	1.29	T.	11	9	9	13	sw.	U. S. Weather Bureau.
Catawba	Roanoke	1,760	2	45.1	.....	73	7	20	10	43	2.17	.....	0.60	0.5	7	17	9	5	w.	State Board of Health Sanitarium.
Charlottesville	Albemarle	800	24	44.6	+ 8.8	72	7	23	22	32	2.32	− 0.97	0.78	1.5	9	13	2	16	s.	Leander McCormick Obs.
Clarksville	Mecklenburg	286	19	.....	.....	.....	.....	.....	.....	.....	2.81	− 0.46	0.52	T.	10	.....	.....	.....	.....	J. A. Ligon.
Columbia	Fluvanna	246	15	42.8	+ 7.2	70	7	10	9	42	2.49	− 0.78	0.85	T.	7	18	3	10	sw.	Chesapeake & Ohio Ry.
Danville	Pittsylvania	413	13	.....	.....	.....	.....	.....	.....	.....	3.13	− 0.24	0.69	T.	13	.....	.....	.....	.....	C. G. Watkins.
Diamond Springs	Princess Anne	25	3	52.0	.....	76	8	26	29	43	3.06	.....	1.49	0	7	15	5	11	.....	Va. Truck Experiment Sta.
Dry Bridge	Chesterfield	325	2	.....	.....	.....	.....	.....	.....	.....	2.89	.....	1.04	T.	13	.....	.....	.....	.....	Dr. E. W. Magruder.
Hampton	Elizabeth City	5	30	49.2	+ 9.5	72	8	30	9	40	4.03	+ 1.34	1.00	0	9	14	1	16	n.	Normal & Agricultural Inst.
Hot Springs	Bath	2,195	21	40.4	+ 9.6	64	11	15	10	33	3.27	+ 0.25	0.79	T.	13	17	7	7	.....	F. M. Terry.
Ivor	Southampton	87	4	49.0	.....	75	8	24	15†	43	5.53	.....	1.60	0	7	.....	.....	.....	.....	N. & W. Ry. Ex. Farm.
Lassiter	Goochland	100	3	.....	.....	.....	.....	.....	.....	.....	2.76	.....	1.55	0	7	21	2	8	.....	T. J. Davis.
Lexington	Rockbridge	1,060	36	41.0	+ 7.1	68	7	15	10	39	2.84	− 0.40	0.77	1.1	10	15	8	8	.....	Virginia Military Institute.
Lynchburg	Campbell	685	42	45.2	+ 9.4	73	7	20	10	34	1.91	− 1.81	0.68	1.3	12	7	10	14	sw.	U. S. Weather Bureau.
Newport News	Warwick	55	10	49.3	+ 7.0	76	8	29	29	32	3.78	+ 0.66	0.91	0	16	8	10	13	sw.	C. W. Ashby.
Norfolk	Norfolk	91	43	51.2	+10.8	77	8	31	9	37	3.39	+ 0.02	1.26	T.	10	10	8	13	sw.	U. S. Weather Bureau.
Randolph	Charlotte	334	9	.....	.....	.....	.....	.....	.....	.....	3.14	.....	0.57	0	11	.....	.....	.....	.....	W. J. Abbitt.
Richmond	Henrico	144	34	46.7	+ 8.7	75	8	25	15	38	2.53	− 0.49	1.00	0.4	13	9	3	19	s.	U. S. Weather Bureau.
Roanoke	Roanoke	907	3	42.7	.....	72	7	20	15	35	2.31	.....	1.08	0.5	10	18	7	6	se.	Reese F. Bell.
Rocky Mount	Franklin	1,150	19	45.1	+ 6.5	68	7†	17	10	36	2.83	− 0.49	1.12	T.	9	.....	.....	.....	.....	G. W. B. Hale.
Ruckersville	Greene	625	2	43.4	.....	70	7	16	14	38	2.56	.....	0.79	T.	12	.....	.....	.....	.....	Dr. Jesse Ewell.
Spottsville (near)	Surry	15	25	49.4	+11.3	75	8	28	2†	34	3.47	+ 0.40	1.02	0	7	12	3	16	sw.	B. W. Jones.
Williamsburg	James City	70	22	48.0	+ 9.6	75	8	26	15	35	3.42	− 0.73	1.15	0	8	12	7	12	sw.	Eastern State Hospital.
North Carolina.																				
Albemarle	Stanly	700	....	49.6	.....	74	8	22	14†	39	4.44	.....	1.92	0	10	17	3	11	sw.	M. J. Harris.
Beaufort	Carteret	10	12	55.3	+ 7.4	71	20	35	29	22	3.07	− 0.76	0.80	0	13	11	9	11	sw.	Lewis Radcliffe.
Brewers	Wilkes	1,950	16	45.0	+ 6.8	72	7	17	10	40	3.35	− 0.48	1.17	0	14	9	7	15	w.	W. L. Brewer.
Caroleen	Rutherford	806	13	47.0	+ 5.9	72	8	22	14†	35	5.75	+ 2.17	2.18	0	12	6	13	12	sw.	S. B. Tanner.
Chapel Hill	Orange	500	55	50.4[a]	+10.6	75	6†	20	4†	37	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. H. Patterson.
Charlotte	Mecklenberg	773	37	48.8	+ 8.4	71	8	27	14	34	3.70	− 0.59	1.60	T.	13	7	7	17	sw.	U. S. Weather Bureau.
Chimney Rock	Rutherford	1,150	3	47.0	.....	77	7	20	4	38	4.65	.....	1.90	0	8	18	7	6	w.	J. M. Flack.
Durham (near)	Durham	406	4	.....	.....	.....	.....	.....	.....	.....	2.99	.....	1.13	0	8	.....	.....	.....	.....	J. C. Michie.
Eagletown	Northampton	66	8	51.8	.....	76	8	27	15	35	4.04	.....	1.31	T.	8	11	13	7	sw.	J. T. Elliott.
Edenton	Chowan	30	19	52.7	+10.7	78	8	27	29	41	4.70	+ 1.18	1.75	0	9	14	8	9	sw.	E. R. Conger.
Elizabeth City	Pasquotank	8	1	53.4	.....	78	8	27	29	49	6.20	.....	2.00	0	6	11	0	20	sw.	W. J. Simmons.
Elizabethtown	Bladen	60	2	.....	.....	.....	.....	.....	.....	.....	4.19	.....	0.99	0	6	.....	.....	.....	.....	J. W. Hall, jr.
Enfield (near)	Halifax	99	2	.....	.....	.....	.....	.....	.....	.....	5.64	.....	1.10	0	10	.....	.....	.....	.....	T. S. Inborden.
Fayetteville	Cumberland	170	26	53.8	+10.7	74	6†	29	4	31	3.52	− 0.66	1.10	0	11	6	5	20	s.	Frank Glover.
Globe (near)	Caldwell	1,800	1	43.6	.....	72	7	21	10	36	2.96	.....	1.09	0	8	11	7	13	s.	Julius L. Gragg.
Goldsboro	Wayne	102	43	51.9	+ 9.6	78	8	29	2†	39	3.65	+ 0.89	1.30	0	8	.....	.....	.....	s.	Mrs. J. J. Robinson.
Gorge (near)	Caldwell	1,358	1	42.6	.....	70	7	20	15	34	3.65	.....	1.08	T.	13	5	12	14	sw.	A. J. Bagley.
Graham	Alamance	656	11	.....	.....	.....	.....	.....	.....	.....	4.39	+ 1.13	1.23	0	10	.....	.....	.....	.....	Dr. W. R. Goley.
Greensboro	Guilford	843	32	48.1	+ 8.2	74	8	25	14	35	5.26	+ 2.12	1.74	0	9	.....	.....	.....	sw.	A. H. Horry.
Greenville	Pitt	75	20	.....	.....	.....	.....	.....	.....	.....	4.65	+ 1.04	1.04	0	14	.....	.....	.....	.....	R. M. Hearne.
Hatteras	Dare	11	39	56.2	+10.3	71	17	38	4	27	3.62	− 1.32	1.75	0	15	5	12	14	sw.	U. S. Weather Bureau.
Henderson	Vance	508	40	48.5	+ 9.1	73	7	26	15	28	3.93	+ 0.66	1.31	0	9	12	12	7	sw.	Enoch Powell.
Hickory	Catawba	1,165	....	46.0[b]	.....	72	8	23	10†	33	4.55	.....	1.85	0	11	13	8	10	sw.	Frank B. Gwin.
Kings Mountain	Cleveland	952	1	47.8	.....	70	6†	25	14	29	4.62	.....	1.85	0	9	14	6	11	sw.	G. T. King.
Kinston	Lenoir	46	15	54.6	+11.6	79	8	27	29	34	2.98	− 0.24	0.61	0	11	10	6	15	se.	H. C. V. Peebles.
Lincolnton	Lincoln	994	7	46.8	.....	73	8	18	14	36	4.31	.....	1.35	0	9	12	9	10	sw.	S. P. Houser.
Louisburg	Franklin	375	22	50.0	+11.0	75	8	25	15	33	5.22	+ 1.91	1.89	T.	11	11	9	11	sw.	T. B. Wilder.
Lumberton	Robeson	103	30	52.9	+10.0	77	6†	29	4	43	2.14	− 1.20	0.67	0	10	.....	.....	.....	sw.	B. M. Davis.
Manteo	Dare	12	8	53.2	.....	74	8	30	29	35	1.56	.....	0.44	0	6	16	8	7	sw.	U. S. Weather Bureau.
Marion	McDowell	1,425	21	46.0	+ 6.8	73	7	21	10†	36	3.76	− 0.25	1.49	T.	12	12	13	6	e.	Sergt. Thomas McGuire.
Middletown	Hyde	4	2	53.6[1]	.....	73	20	29	29	38	1.91	.....	0.87	0	8	.....	.....	.....	.....	J. S. Mann.
Moncure	Chatham	145	19	49.4	+ 8.5	74	7†	23	2	37	5.44	+ 2.41	1.70	0	9	12	4	15	sw.	B. J. Utley.
Monroe	Union	586	19	51.0	+ 9.8	73	7†	22	14	34	4.68	+ 1.65	1.77	0	7	10	1	20	sw.	T. A. Ashcraft.
Morganton	Burke	1,135	26	46.2	+ 7.8	73	8	20	14†	37	4.31	+ 0.67	1.69	0	9	15	5	11	sw.	J. B. P. Massey.
Mount Airy	Surry	1,048	25	44.2	+ 7.5	68	7	17	10	36	3.46	+ 0.21	1.28	T.	12	14	6	11	se.	Prof. A. H. Merritt.
Mount Holly	Gaston	616	16	.....	.....	.....	.....	.....	.....	.....	5.59	+ 1.54	1.85	0	12	.....	.....	.....	.....	J. W. Holland.
Nashville	Nash	190	9	50.2	.....	75	8	25	15	33	6.04	.....	2.08	T.	13	7	2	22	w.	J. B. Boddie.
Neuse	Wake	266	1	.....	.....	.....	.....	.....	.....	.....	5.73	.....	1.58	0	10	.....	.....	.....	.....	E. M. Allen.
Newbern	Craven	12	31	52.9	+ 7.4	79	17	22	29	50	1.88	− 2.15	0.68	0	9	9	11	11	sw.	J. B. Hill.
N. Wilkesboro (near)	Wilkes	1,700	1	45.6	.....	69	7	22	10	28	4.22	.....	1.56	0	9	10	12	9	sw.	Dr. Charles A. Willis.
Parkersburg	Sampson	121	1	54.3	.....	78	8†	27	2	36	2.45	.....	1.30	0	3	12	10	9	nw.	E. J. Conway.
Pinehurst	Moore	650	9	49.8	.....	73	7	27	15	40	4.70	.....	1.34	0	7	13	5	13	sw.	General Office.
Pittsboro	Chatham	480	20	.....	.....	.....	.....	.....	.....	.....	3.58	− 0.02	1.20	0	7	13	4	14	s.	Mrs. J. F. Alston.
Raleigh	Wake	390	42	50.2	+ 9.8	73	8	30	15	33	5.95	+ 2.40	2.15	T.	13	8	8	15	sw.	U. S. Weather Bureau.
Ramseur	Randolph	442	6	48.7	.....	73	8	18	15	41	3.55	.....	1.43	0	11	12	5	14	sw.	A. H. York.
Randleman	do	810	8	.....	.....	.....	.....	.....	.....	.....	4.71	.....	1.45	0	10	.....	.....	.....	.....	J. R. Walton.
Reidsville	Rockingham	828	14	47.4	+11.3	72	7	25	15	33	3.43	+ 0.11	1.55	0	11	10	3	18	sw.	E. M. Redd.
Rock House	Macon	3,100	21	43.3	+ 6.2	60	25	20	3	29	7.30	+ 1.01	1.79	0.3	16	8	12	11	sw.	Barry C. Hawkins.
Rockingham	Richmond	210	18	50.6	+ 8.2	73	6†	24	3	40	3.70	+ 0.74	1.20	0	9	.....	.....	.....	.....	H. S. Ledbetter.
Rocky Mount	Nash	105	2	.....	.....	.....	.....	.....	.....	.....	5.20	.....	1.25	0	11	.....	.....	.....	.....	G. P. Womble.
Salem	Forsyth	1,000	18	.....	.....	.....	.....	.....	.....	.....	3.41	+ 0.29	0.84	0	7	.....	.....	.....	.....	Rev. H. E. Rondthaler.
Salisbury	Rowan	760	29	49.2	+ 8.2	75	8	24	15	34	5.51	+ 2.05	1.79	0	6	16	2	13	n.	Miss Thelma Wilkinson.
Saxon	Stokes	900	21	.....	.....	.....	.....	.....	.....	.....	3.90	+ 0.54	1.50	0	9	9	6	16	s.	L. A. Duncan.
Scotland Neck	Halifax	80	9	50.6	.....	74	8	26	2†	41	3.80	.....	1.08	0	10	7	4	20	sw.	J. Y. Savage.
Settle	Iredell	700	17	46.4	+ 8.0	72	7†	19	9†	47	4.79	+ 1.77	1.72	0	9	12	5	14	sw.	C. H. Smith.
Sloan	Duplin	50	20	55.6	+10.4	78	8	27	29	39	1.49	− 2.14	0.76	0	7	6	9	16	s.	D. M. Sholar.
Smithfield	Johnston	151	23	50.1	+ 8.5	75	8	27	2†	41	5.16	+ 1.79	1.45	0	12	8	8	15	s.	Edwin S. Sanders.
Southern Pines	Moore	519	23	52.6	+ 9.2	73	8	27	4	37	5.40	+ 1.92	2.00	0	9	12	6	13	.....	Mrs. P. H. Beck.
Southport	Brunswick	18	58	55.8	+ 8.6	75	21	32	4	26	1.78	− 1.99	0.70	0	11	8	17	6	s.	Mrs. C. E. Taylor.
Statesville	Iredell	950	25	47.5	+ 8.5	72	8	21	14†	42	4.69	+ 0.72	1.94	0	7	6	11	14	sw.	D. Matt Thompson.
Tarboro	Edgecombe	50	28	51.9	+10.3	77	7†	28	2†	36	6.27	+ 2.50	2.00	0	11	11	3	17	.....	E. V. Zoeller.
Tryon (near)	Polk	1,300	1	49.2	.....	69	8†	28	4†	29	6.48	.....	2.75	0	14	18	0	13	sw.	W. T. Lindsey.
Weldon	Halifax	81	41	48.0	+ 8.6	75	7†	26	15	43	3.59	+ 0.06	0.85	T.	11	8	7	16	.	H. S. S. Cooper.
Willard	Pender	51	5	56.0	.....	80	24	27	29	38	2.37	.....	1.00	0	7	12	5	14	s.	J. H. Jefferies.
Wilmington	New Hanover	52	42	55.6	+10.0	76	24	32	4	28	1.80	1.70	0.84	0	12	7	15	9	sw.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for January, 1913. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
South Carolina.																			
Aiken	Aiken	565	18	55.7	+ 9.4	77	7	30	14†	40	0.85	− 2.94	0.55	0	2	10	14	7	se.	C. E. Carman.
Allendale	Barnwell	186	24	55.2	+ 7.9	79	21†	32	30	38	0.90	− 2.00	0.90	0	1	11	0	20	.....	Richard Hiers.
Anderson	Anderson	764	11	51.0	+ 8.6	71	6	28	14	31	4.89	+ 0.72	1.59	0	12	9	0	22	w.	H. H. Russell.
Batesburg	Lexington	656	24	52.6	+ 7.8	74	6	29	14	31	4.07	+ 0.44	1.22	0	8	12	7	12	n.	E. J. Hite.
Beaufort	Beaufort	20	26	56.6[d]	+ 6.0	76	20	36	3	27	5.55	+ 2.75	4.00	0	4	....	....	....	sw.	Miss Lillian H. Rice.
Blackville	Barnwell	296	23	56.8	+10.4	79	21†	29	4	41	2.24	− 0.57	0.64	0	11	11	7	13	sw.	Miss M. E. Lange.
Blairs	Fairfield	293	7	.....	.....	.....	.....	.....	.....	.....	1.60	.....	0.70	0	5	13	0	18	.....	J. N. Owens.
Bowman	Orangeburg	160	11	55.2	+ 7.5	80	24	29	4	40	1.77	− 1.30	1.03	0	6	10	12	9	sw.	B. O. Evans.
Calhoun Falls	Abbeville	508	19	.....	.....	.....	.....	.....	.....	.....	5.88	+ 2.12	2.40	0	9	10	10	11	w.	L. M. Parker.
Camden	Kershaw	222	46	56.4	.....	76	6	28	14	33	2.59	− 0.61	0.89	0	10	10	6	15	sw.	W. C. Brown.
Catawba	York	562	7	.....	.....	.....	.....	.....	.....	.....	3.28	.....	0.94	0	9	9	14	8	s.	James C. Faris.
Chappells	Newberry	402	7	.....	.....	.....	.....	.....	.....	.....	2.90	.....	1.77	0	4	15	0	16	w.	J. J. Murran.
Charleston	Charleston	48	42	58.4	+ 9.1	77	21	37	4	25	0.99	− 2.46	0.61	0	10	7	10	14	sw.	U. S. Weather Bureau.
Cheraw	Chesterfield	144	24	53.3[a]	+10.5	73	6†	29	14†	36	2.67	− 0.17	0.88	0	9	10	3	18	sw.	J. H. Powe.
Clemson College	Oconee	850	21	49.6	+ 7.6	69	26	25	14	31	5.20	+ 0.31	1.80	0	10	14	6	11	sw.	Prof. John N. Hook.
Columbia	Richland	351	26	54.4	+ 9.3	75	7	30	14	28	1.56	− 1.73	0.63	0	10	7	8	16	sw.	U. S. Weather Bureau.
Conway	Horry	25	20	56.7[c]	+ 9.3	82	24	31	4	39	2.80	− 0.60	0.95	0	5	8	0	23	w.	Paul Quattlebaum.
Darlington	Darlington	175	17	53.6[a]	.....	75	7†	29	2†	35	1.90	− 0.56	1.03	0	6	11	6	14	.....	D. C. McCall.
Dillon	Dillon	100	8	54.8[d]	+10.0	78	24	30	30	35	0.99	− 1.91	0.32	0	6	....	....	....	.....	A. E. Rowell.
Edisto	Bamberg	127	25	.....	.....	.....	.....	.....	.....	.....	2.53	− 0.56	0.84	0	6	10	6	15	ne.	Nathan Jenkins.
Effingham	Florence	106	20	.....	.....	.....	.....	.....	.....	.....	2.85	− 0.51	0.93	0	5	17	1	13	n.	H. B. McCall.
Ferguson	Berkeley	51	4	55.7[a]	+ 8.6	80	25	30	28	36	2.81	− 0.76	1.30	0	6	16	0	15	nw.	Dr. J. R. Des Portes.
Florence	Florence	136	24	53.6	+10.1	77	24†	30	14	36	3.53	+ 0.97	1.80	0	8	13	3	15	sw.	H. K. Gilbert.
Gaston Shoals	Cherokee	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.63	.....	1.34	0	10	....	....	....	.....	Harry A. Parshall.
Georgetown	Georgetown	12	19	59.4	+11.7	82	8	35	14	33	0.50	− 3.17	0.25	0	2	7	10	14	.....	A. P. Hazard.
Greenville	Greenville	989	20	47.2	+ 7.2	68	26	24	4	35	5.68	+ 1.46	1.95	0	11	13	0	18	sw.	Spartan Goodlette.
Greenwood	Greenwood	671	24	50.5	+ 8.7	75	6	25	14	43	6.33	+ 1.81	3.20	0	8	11	0	20	w.	M. M. Calhoun.
Heath Springs	Lancaster	568	11	50.4	.....	77	16	25	6	50	2.34	.....	1.98	0	6	7	6	18	sw.	Charlie Bowers.
Kingstree	Williamsburg	54	24	55.4	+ 8.1	80	24	32	4†	37	4.05	+ 1.25	1.30	0	8	11	1	19	ne.	A. O. Matthews.
Liberty	Pickens	900	18	48.4	+ 6.6	67	6	23	14	29	5.08	+ 0.18	1.80	T.	15	10	9	12	sw.	John T. Boggs.
Little Mountain	Newberry	711	19	52.2	+ 7.2	75	6†	29	15	30	1.87	− 1.23	0.72	0	5	15	2	14	w.	J. M. Sease, M. D.
Meriwether	Edgefield	.....	3	54.4[d]	.....	75	7	26	14	34	1.59	.....	0.46	0	5	....	....	....	.....	William S. Middleton.
Monetta	Aiken	.....	1	54.2	.....	75	6	29	4†	34	1.81	.....	0.45	0	10	9	5	17	sw.	Joseph M. Johnson.
Newberry	Newberry	502	8	52.0	+ 9.0	75	6	27	14	35	4.50	+ 0.20	1.22	0	12	7	7	17	s.	W. G. Peterson.
Pelzer	Anderson	873	7	.....	.....	.....	.....	.....	.....	.....	5.20	.....	1.76	0	15	14	0	17	w.	J. M. Ward.
Pinopolis	Berkeley	55	19	.....	.....	.....	.....	.....	.....	.....	2.91	− 0.23	1.05	0	7	13	0	18	nw.	Miss E. P. Ravenel.
St. George	Dorchester	109	24	54.6	+ 7.5	78	24	32	30	36	2.90	+ 0.16	1.55	0	6	13	0	18	.....	G. F. Lewis.
St. Matthews	Calhoun	209	24	54.2	+ 8.3	77	8	26	30	37	2.89	− 0.37	1.20	0	7	8	0	23	n.	J. S. Wannamaker.
Saluda	Saluda	530	10	54.0	.....	77	7	25	14†	41	2.08	.....	0.50	0	7	9	10	12	s.	Mrs. F. V. J. Maxwell.
Santuc	Union	572	17	51.4	+ 9.0	72	6	26	14†	33	5.58	+ 2.20	2.17	0	12	5	12	14	s.	E. W. Jeter.
Smiths Mills	Williamsburg	62	17	.....	.....	.....	.....	.....	.....	.....	2.56	− 0.01	0.76	0	7	11	0	20	s.	W. G. Walker.
Society Hill	Darlington	75	15	54.4	+11.1	76	8	30	3	38	2.84	− 0.11	1.05	0	9	6	10	15	ne.	T. Ellison Simpson.
Spartanburg	Spartanburg	875	21	47.4	+ 5.2	70	6	24	14	40	4.68	+ 0.89	1.70	0	13	11	0	20	.....	F. P. Robinson.
Summerville	Dorchester	75	15	58.6	+10.4	78	24	30	4	35	3.72	+ 0.62	1.72	0	12	1	26	4	sw.	Miss E. H. Gadsden.
Trenton	Edgefield	620	19	52.0[d]	+ 5.6	74	6	29	14	30	1.69	− 1.63	0.32	0	9	5	14	12	s.	C. A. Long.
Walterboro	Colleton	69	8	59.0[a]	.....	81	24	31	4	33	2.99	.....	1.20	0	9	18	3	10	.....	B. Levy.
Winnsboro	Fairfield	545	22	51.4	+ 8.2	72	6	27	14	30	4.67	+ 1.41	1.82	0	5	10	15	6	se.	J. W. Seigler.
Winthrop College	York	690	13	51.4	+ 8.6	72	6	26	14	30	4.25	+ 1.40	1.40	0	7	5	22	4	sw.	W. P. Goodman.
Yemassee	Hampton	24	17	55.6[d]	+ 7.7	82	24	30	4†	42	4.20	+ 1.71	2.70	0	10	14	1	16	sw.	J. G. Hutson.
Georgia.																			
Abbeville	Wilcox	180	10	.....	.....	.....	.....	.....	.....	.....	3.62	+ 0.16	1.46	0	7	....	....	....	s.	W. H. Calhoun.
Adairsville	Bartow	772	21	49.2	+ 8.3	70	6	23	4	33	4.95	+ 0.74	1.20	T.	8	13	6	12	.....	Mrs. R. C. Evins.
Albany	Dougherty	232	26	58.4	+ 9.5	82	6	33	4	36	2.46	− 1.26	0.57	0	9	7	13	11	se.	George C. Brosnan.
Allapaha	Berrien	293	23	57.0	+ 6.9	79	6	31	4	36	3.41	+ 0.22	1.00	0	8	3	11	17	ne.	J. F. Rice.
Athens	Clarke	694	31	48.6	+ 6.6	73	6	25	14	33	4.53	− 0.52	2.07	0	13	9	4	18	ne.	C. D. Cox.
Atlanta	Fulton	1,218	48	49.5	+ 6.8	69	6	29	3	35	5.76	+ 1.08	2.88	T.	15	6	5	20	se.	U. S. Weather Bureau.
Augusta	Richmond	180	67	55.3	+ 8.3	76	6	31	14	30	1.59	− 2.28	0.43	0	13	5	8	18	s.	Do.
Bainbridge	Decatur	119	21	56.8	+ 6.0	76	23	33	4†	40	4.49	+ 1.14	1.94	0	8	10	4	17	w.	Mrs. C. O. Wimberley.
Butler	Taylor	650	12	.....	.....	.....	.....	.....	.....	.....	1.76	− 1.55	0.65	0	5	....	....	....	se.	Mrs. M. F. Wallace.
Camak	Warren	613	21	53.0	+ 8.3	77	6	27	15	38	2.65	− 0.68	0.79	0	7	3	4	24	.....	J. A. Chapman.
Canton	Cherokee	894	22	.....	.....	.....	.....	.....	.....	.....	4.81	− 0.20	2.20	T.	9	6	6	19	.....	Mrs. Ada P. Mills.
Carlton	Madison	557	14	.....	.....	.....	.....	.....	.....	.....	4.81	+ 1.89	1.67	0	11	....	....	....	w.	M. C. Power.
Clayton	Rabun	2,100	19	46.0	+ 5.8	66	25	21	14†	35	5.69	+ 0.14	1.63	T.	11	13	6	12	w.	A. J. Duncan.
Columbus	Muscogee	262	25	54.3	+ 7.8	79	6	30	4	38	1.65	− 1.96	0.40	0	9	9	3	19	ne.	A. J. Land.
Concord	Pike	850	....	51.2	.....	73	6	30	14	31	2.32	.....	0.85	0	10	12	7	12	.....	C. T. Smith.
Covington	Newton	800	21	.....	.....	.....	.....	.....	.....	.....	4.00	+ 0.12	1.40	0	11	6	11	14	e.	Mrs. Sarah E. Cruse.
Dahlonega	Lumpkin	1,519	21	46.8	+ 6.3	64	19	25	4†	30	5.61	+ 0.08	1.75	T.	15	6	18	7	se.	Prof. B. P. Gaillard.
Diamond	Gilmer	2,020	21	46.3[a]	+ 6.8	69	6	22	9	36	7.31	+ 2.05	1.80	3.0	12	10	7	14	.....	Robert A. Kimzey.
Dublin	Laurens	452	19	54.4	.....	78	6	27	4	40	2.58	− 0.84	0.65	0	10	12	8	11	ne.	Mrs. M. E. Martin.
Eastman	Dodge	361	21	56.8	+ 7.3	84	6	29	4	40	2.40	− 0.68	0.89	0	9	....	....	....	nw.	Mrs. H. T. Bohannon.
Eatonton	Putnam	577	9	54.1	.....	74	6	26	14	36	1.65	− 1.91	0.68	0	10	....	....	....	.....	Prof. W. C. Wright.
Elberton	Elbert	710	21	50.6	+ 7.3	72	6	25	4	34	6.50	+ 1.88	2.32	0	10	....	....	....	w.	H. A. Roebuck.
Experiment	Spalding	946	12	51.9	+ 7.0	71	6	31	14	30	1.64	− 1.13	0.65	0	6	15	6	10	.....	M. V. Calvin.
Fort Gaines	Clay	116	25	55.6	+ 8.0	76	21	31	15	35	1.47	− 2.09	0.40	0	7	....	....	....	se.	Miss Eva T. Graham.
Gainesville	Hall	1,214	34	45.8	+ 5.9	65	6†	23	14†	37	5.12	− 0.04	2.30	0	9	....	....	....	e.	W. C. Walker.
Gillsville	do	1,052	21	.....	.....	.....	.....	.....	.....	.....	5.59	+ 1.47	2.18	0	11	....	....	....	e.	G. W. Lichtenstine.
Glennville	Tattnall	.....	8	57.6	.....	78	24	32	4	36	1.03	.....	0.60	0	6	....	....	....	e.	Miss Fanny Barnard.
Gore	Chattooga	729	14	49.2	+ 7.8	72	7	23	4	42	5.91	+ 1.88	1.00	T.	14	12	6	13	s.	H. M. Ponder.
Granite Hill	Hancock	.....	1	53.0	.....	74	6	29	4†	32	1.99	.....	0.56	0	15	7	14	10	.....	George White, jr.
Greensboro	Greene	598	11	51.2	+ 7.8	75	6	27	14	37	3.02	− 0.26	0.83	0	7	....	....	....	w.	R. L. Caldwell.
Griffin	Spalding	975	24	50.4	+ 5.2	73	6	29	4	37	3.02	+ 0.04	0.99	T.	8	7	14	10	.....	J. M. Mathews.
Harrison	Washington	378	14	55.2	+ 8.3	77	6†	30	4	35	1.45	− 1.77	0.70	0	4	10	8	13	s.	Thomas L. Wood.
Hawkinsville	Pulaski	235	17	54.4[b]	+ 8.0	80	21	27	4	35	2.69	− 1.24	0.75	0	7	....	....	....	.....	R. H. Wood.
Lisbon	Lincoln	326	6	52.0	.....	75	6	24	14†	39	4.44	.....	2.03	0	11	....	....	....	.....	B. J. Du Bose.
Lost Mountain	Cobb	1,175	13	48.0	+ 4.9	73	19	26	9	35	5.77	+ 1.79	2.60	0	8	....	....	....	e.	A. N. Mayes.
Louisville	Jefferson	259	20	55.2	+ 8.1	76	7	30	4	32	1.76	− 1.52	0.55	0	6	....	....	....	.....	J. C. Little.
Lumber City	Telfair	150	4	.....	.....	.....	.....	.....	.....	.....	3.44	.....	0.78	0	6	5	5	21	e.	Walter A. Hilton.
Macon	Bibb	370	32	53.8	+ 7.0	75	6	32	4	33	1.87	− 1.77	0.53	T.	12	7	8	16	s.	U. S. Weather Bureau.
Marshallville	Macon	500	20	55.6	+ 8.0	78	6	28	30	34	1.72	− 2.53	0.40	0	7	....	....	....	e.	E. C. Bryan.
Milledgeville	Baldwin	276	25	52.8	+ 8.5	74	6	25	14	35	2.33	− 1.71	0.40	0	12	....	....	....	s.	Prof. O. M. Cone.
Millen	Jenkins	158	25	57.4	+10.1	82	20†	30	4	37	2.55	− 0.36	1.00	0	6	....	....	....	nw.	M. G. McComb.

TABLE 1.—*Climatological data for January, 1913. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevail g wind direction.	
Georgia—continued.																			
Montezuma	Macon	292	8	.....	.....	.....	.....	.....	.....	.....	1.86	.....	0.30	0	10	.....	.....	.....	ne.	J. C. Collins.
Monticello	Jasper	800	18	51.7	+ 6.2	74	6	28	14	34	3.79	− 0.52	2.10	0	14	.....	.....	.....	.....	Miss Maude Penn.
Newnan	Coweta	959	24	49.4	+ 6.5	72	6	29	14†	32	4.77	+ 1.05	2.00	0	10	11	3	17	s.	Mrs. Ida J. Milner.
Norcross	Gwinnett	1,078	3	.....	.....	.....	.....	.....	.....	.....	5.66	.....	2.90	0	11	8	3	20	.....	W. O. Medlock.
Point Peter	Oglethorpe	600	23	49.4	+ 6.8	71	6	24	14	31	6.62	+ 2.01	2.05	0	9	6	12	13	.....	C. M. Witcher.
Poulan	Worth	365	23	58.8	+10.7	82	6†	31	4	38	3.73	+ 0.14	1.33	0	11	9	12	10	.....	C. T. Merritt.
Putnam	Marion	.....	13	53.5[k]	+ 5.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Miss Mildred Collum.
Quitman	Brooks	173	27	59.0	+ 7.7	82	6	32	28	38	6.02	+ 2.46	1.80	0	6	.....	.....	.....	ne.	A. B. Jones.
Ramhurst	Murray	900	20	51.4	+ 8.2	70	7	25	9	32	5.92	+ 1.82	1.25	T.	16	11	6	14	s.	D. E. Humphreys.
Resaca	Gordon	657	19	.....	.....	.....	.....	.....	.....	.....	5.25	+ 0.81	1.50	0	9	6	3	22	s.	D. A. Norton.
Rome	Floyd	576	54	47.7	+ 5.0	73	7	26	4	41	5.60	+ 0.88	1.71	0	11	9	5	17	se.	W. M. Towers.
St. George	Charlton	50	6	60.8[a]	.....	82	24	32	5†	34	2.35	.....	1.15	0	6	17	9	5	sw.	A. N. Lund.
St. Marys	Camden	20	22	62.5	+ 9.9	87	6	34	4	43	1.06	− 1.64	0.81	0	5	3	16	12	ne.	David C. Sterling.
Savannah	Chatham	65	62	59.7	+ 8.3	78	8	39	4	25	1.24	− 1.80	0.56	0	11	6	8	17	s.	U. S. Weather Bureau.
Statesboro	Bulloch	253	13	59.2	+10.7	81	24	30	4	35	1.11	− 1.80	0.52	0	3	8	16	7	s.	W. C. Cromley.
Talbotton	Talbot	750	19	53.8	+ 7.3	77	6	29	4	37	3.11	− 0.79	0.68	0	9	.....	.....	.....	sw.	Dr. E. L. Bardwell.
Tallapoosa	Haralson	1,150	14	48.2	+ 5.9	74	6	25	14†	38	5.57	+ 2.35	2.60	T.	8	.....	.....	.....	se.	Frederick Ellison.
Thomasville	Thomas	273	31	59.4	+ 7.3	81	6	35	4	33	1.65	− 1.95	0.65	0	10	11	6	14	s.	U. S. Weather Bureau.
Tifton	Tift	370	1	58.0	.....	80	6	34	4†	33	1.75	.....	0.43	0	6	7	16	8	sw.	J. F. Hart, jr.
Toccoa	Stephens	1,050	27	47.7	+ 5.9	69	25	24	14	33	4.16	− 0.80	1.75	0	11	.....	.....	.....	w.	Mrs. Alice N. Starke.
Valdosta	Lowndes	220	8	60.6	.....	84	6	33	4†	40	4.20	.....	1.60	0	4	.....	.....	.....	w.	Miss Annie Twitty.
Valona	McIntosh	10	15	.....	.....	.....	.....	.....	.....	.....	2.70	+ 0.02	1.05	0	3	.....	.....	.....	ne.	George E. Atwood.
Washington	Wilkes	630	22	51.1	+ 7.4	74	6	29	4†	36	4.00	+ 0.30	1.57	0	9	8	3	20	ne.	Miss Ella B. Smith.
Waycross	Ware	131	24	60.6	+ 9.6	82	6	33	4	34	2.87	0.00	0.65	0	6	.....	.....	.....	s.	Thomas Sasser.
Waynesboro	Burke	86	21	54.4	+ 7.9	79	7	26	14	38	1.68	− 0.52	0.35	0	7	11	7	13	w.	Mrs. H. W. Blount.
West Point	Troup	620	23	51.5	+ 6.7	75	6	28	4	38	3.65	+ 0.34	1.73	0	12	.....	.....	.....	ne.	E. N. Dunn.
Woodbury	Meriwether	641	12	.....	.....	.....	.....	.....	.....	.....	2.09	− 0.90	1.04	0	7	12	5	14	s.	E. T. Riggins.
Florida.																				
Apalachicola	Franklin	24	8	60.6	.....	78	25	40	28	22	2.98	.....	2.00	0	4	.....	.....	.....	se.	G. H. Whiteside.
Arcadia	De Soto	61	12	69.6	+ 8.1	86	24	39	29	34	1.34	− 0.80	0.61	0	5	17	12	2	e.	C. S. Bushnell.
Archer	Alachua	92	28	66.4[e]	+11.0	83[e]	20†	36[f]	29†	35	3.37	− 0.41	1.05	0	6	21	4	6	.....	R. B. Hodgson.
Avon Park	De Soto	150	14	69.1	+ 7.8	85	24†	40	29	34	1.72	− 0.41	0.66	0	6	18	7	6	e.	William King.
Bartow	Polk	115	25	67.1	+ 6.5	84	8†	35	29	36	1.33	− 0.92	0.60	0	4	20	7	4	ne.	William Hood.
Brooksville	Hernando	126	20	68.1	+10.1	85	7†	40[a]	29†	33	1.08	− 1.86	0.58	0	2	20	8	3	ne.	C. C. Peck.
Carrabelle	Franklin	10	14	59.2	+ 6.0	79	25	34	29	33	2.60	− 0.29	1.30	0	3	.....	.....	.....	.....	J. J. Blomquist.
Cedar Key	Levy	10	24	65.0	+ 8.5	80	6	40	29	23	2.97	− 0.66	0.95	0	4	.....	.....	.....	w.	J. B. Lutterloh.
Clermont	Lake	105	19	68.8	+ 8.9	88	19	42	29	37	1.47	− 1.10	1.00	0	4	19	10	2	se.	S. S. Fesler.
DeFuniak Springs	Walton	193	14	54.2[j]	+ 2.6	78[j]	26	32[j]	28	33	1.44	− 2.39	0.87	0	3	.....	.....	.....	.....	R. W. Storrs.
DeLand	Volusia	27	16	66.0[c]	+ 8.3	83[c]	7†	34[c]	4	34	0.71	.....	0.35	0	3	.....	.....	.....	se.	A. C. Haynes.
Eustis	Lake	56	22	67.4	+ 9.0	87	6	37	29†	39	1.22	− 1.60	0.78	0	3	24	3	4	w.	C. T. Smith.
Federal Point	Putnam	10	21	65.4	+ 9.5	85	21	37	4†	37	0.96	− 1.85	0.38	0	11	18	11	2	e.	E. S. Hubbard.
Fenholloway	Taylor	75	6	63.0	.....	84	6	35	29	34	1.61	.....	0.81	0	3	5	23	3	sw.	J. Wigglesworth.
Fernandina	Nassau	10	20	62.4	+ 9.4	82	21	39	4	26	2.16	− 0.81	1.08	0	15	10	6	15	sw.	W. B. C. Duryee.
Fort Lauderdale	Dade	10	.....	73.0	.....	85	1	43	4	28	1.72	.....	0.32	0	10	17	12	2	.....	William M. Heine.
Fort Meade	Polk	125	23	68.2	+ 9.0	87	18†	34	29	40	1.36	− 0.94	1.36	0	1	25	1	5	ne.	G. L. Brodrick.
Fort Myers	Lee	12	40	70.0	+ 7.0	85	7†	45	4	27	2.42	+ 0.17	2.20	0	4	26	2	3	e.	Miss M. M. Gardner.
Fort Pierce	St. Lucie	10	12	70.6	+ 7.8	87	12	44	4†	24	2.50	− 0.62	1.30	0	4	.....	.....	.....	.....	T. C. Nicholson.
Gainesville	Alachua	176	17	65.0	+ 9.6	84	7†	36	29	33	2.94	− 0.29	1.45	0	7	14	1	16	se.	John Schnabel.
Garniers (near)	Walton	22	.....	59.0	.....	77	21†	30	2†	40	1.37	.....	0.37	0	11	12	0	19	se.	U. S. Forest Service.
Grasmere	Orange	175	15	66.4	+8.5	85	25†	37	29†	38	1.16	.....	0.49	0	5	25	2	4	.....	J. B. Escott.
Hilliard	Nassau	69	4	62.6	.....	81	24	33	4†	33	2.25	.....	1.55	0	4	15	11	5	.....	B. A. Tibbits.
Homestead	Dade	12	3	70.5	.....	86	1	40	4	31	1.99	.....	0.74	0	9	11	14	6	e.	J. A. Kahl.
Hypoluxo	Palm Beach	9	17	72.4	+ 7.0	83	1†	44	4	27	3.23	− 0.18	1.56	0	12	18	11	2	se.	G. A. Angevine.
Inverness	Citrus	43	13	65.0	+ 9.2	82	7†	35	30	40	0.74	− 1.72	0.38	0	3	6	17	8	.....	W. H. Miller.
Jacksonville	Duval	108	42	63.6	+ 9.7	80	21	43	4	24	1.53	− 1.59	1.02	0	7	11	13	7	ne.	U. S. Weather Bureau.
Jasper	Hamilton	152	12	61.9	+ 9.0	83	6	32	29	36	2.67	− 0.28	0.49	0	8	8	9	14	sw.	Mrs. W. C. Caldwell.
Johnstown	Bradford	125	13	64.6	+10.3	84	6	34	4†	36	1.92	− 0.55	0.80	0	7	3	22	6	.....	A. M. C. Brasch.
Key West	Monroe	14	42	74.2	+ 5.4	82	25	60	4	15	1.62	− 0.36	0.86	0	12	18	11	2	ne.	U. S. Weather Bureau.
Kissimmee	Osceola	65	20	68.5	+ 8.2	84	25	40	29	33	0.54	− 2.15	0.27	0	3	9	20	2	ne.	J. A. Simpson.
Lake City	Columbia	210	28	63.9	+ 7.7	84	6	35	29	34	4.53	− 0.96	1.70	0	8	6	14	11	ne.	W. B. Knight.
Lucerne Park	Polk	.....	.....	68.6	.....	84	7†	42	29	27	0.88	.....	0.34	0	3	6	23	2	ne.	L. D. Niles.
Macclenny	Baker	125	16	62.6	+ 8.3	82	6	34	4†	38	2.15	− 0.37	1.08	0	5	15	11	5	.....	Griffing Bros. Co.
Madison	Madison	200	13	61.1	+ 6.9	83	6	38	29	34	3.13	− 0.12	1.44	0	9	8	2	21	se.	E. J. Vann.
Malabar	Brevard	24	19	69.7	+ 8.6	86	12	30	29	35	1.26	− 1.57	0.55	0	11	27	3	1	se.	J. F. Farley.
Marianna	Jackson	80	10	58.2[b]	+ 6.1	84[c]	21	30	3	....	0.77	− 2.53	0.40	0	5	15	5	11	ne.	W. J. Watson.
Merritts Island	Brevard	20	30	69.1	+ 7.2	82	25	45	4	25	1.51	− 1.45	0.95	0	6	4	26	1	se.	F. Ulrich.
Miami	Dade	47	11	72.4	+ 5.1	82	1	47	4	23	4.42	+ 0.97	1.93	0	11	12	14	5	se.	U. S. Weather Bureau.
Middleburg	Clay	10	12	63.4[e]	+ 9.5	82[e]	21	32[e]	29†	39	1.92	− 0.66	1.00	0	6	.....	.....	.....	.....	G. A. Chalker.
Molino	Escambia	49	11	59.1	+ 7.2	82	24	33	29†	38	4.13	− 0.37	1.33	0	6	13	0	18	n.	W. H. Trimmer.
Monticello	Jefferson	207	9	60.4	.....	83	5	34	28	38	4.91	.....	2.40	0	4	14	14	3	nw.	G. B. Miller.
Mount Pleasant	Gadsen	260	7	59.8	.....	80	6†	32	9	36	2.27	.....	1.57	0	6	.....	.....	.....	s.	Miss Addie Grubb.
Newport	Wakulla	.....	11	60.9	+ 8.9	82	22	33	29	33	1.97	− 1.22	0.83	0	8	16	7	8	se.	Nathaniel Brewer.
New Smyrna	Volusia	9	28	65.8	+ 7.9	87	27	37	30	39	0.84	− 2.13	0.57	0	5	16	11	4	e.	F. Nordman.
Ocala	Marion	98	22	65.7[b]	+ 8.8	85[d]	6†	35	28	34	1.37	− 1.22	0.50	0	5	13	14	4	sw.	J. C. Caldwell.
Orange City	Volusia	39	19	66.1	+ 7.9	86	26	32	29†	44	0.78	− 1.70	0.51	0	4	21	9	1	se.	J. D. Graham.
Orlando	Orange	111	20	67.2	+ 8.0	83	25	37	30	35	0.92	− 1.48	0.36	0	5	9	13	9	se.	James Thomson.
Pensacola	Escambia	149	33	58.0	+ 5.7	72	24	36	28	24	2.17	− 1.87	0.56	0	13	5	11	15	se.	U. S. Weather Bureau.
Plant City	Hillsboro	121	19	68.2	+ 8.2	83	25	39	29	30	1.33	− 1.00	0.48	0	4	22	9	0	s.	E. B. Trask.
Rita	Palm Beach	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.49	29	1.10	.....	0.50	0	3	.....	.....	T. W. Dyches.
Rockwell	Marion	10	11	66.6[g]	+ 9.5	84[g]	26	36[g]	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dunellon Phos. Co.
St. Andrew	Washington	14	16	59.6	+ 8.1	78	20†	37	28	30	1.64	− 1.38	0.60	0	11	22	7	2	w.	W. A. Emmons.
St. Augustine	St. Johns	10	61	64.9	+ 8.8	85	25	35	29	34	0.50	− 2.15	0.40	0	2	30	1	0	e.	E. F. Joyce.
St. Leo	Pasco	140	16	67.8	+ 8.5	84	6†	40	29	31	2.29	− 0.96	0.99	0	5	.....	.....	.....	e.	G. Schneider.
Sand Key	Monroe	.....	1	73.1	.....	78	25	61	4	12	1.12	.....	0.61	0	10	19	12	0	e.	U. S. Weather Bureau.
Satsuma Heights	Putnam	98	5	64.5	.....	82	21	37	29†	31	1.10	.....	0.43	0	7	17	10	4	.....	The Satsuma Co.
Switzerland	St. Johns	10	20	64.8[a]	+10.6	85[a]	6	35[a]	29†	38	0.88	− 1.80	0.50	0	7	.....	.....	.....	.....	Mrs. W. C. Steele.
Tallahassee	Leon	192	26	59.4	+ 7.1	77	25	37	6†	39	4.70	+ 1.10	2.50	0	6	16	5	10	e.	W. H. Markham.
Tampa	Hillsboro	79	23	68.1	+10.7	83	7	45	29	23	1.09	− 1.71	0.55	0	4	17	8	6	ne.	U. S. Weather Bureau.
Tarpon Springs	Pinellas	20	28	67.8	+ 8.1	87	6	41	30	33	1.85	− 0.93	0.68	0	4	.....	.....	.....	e.	A. P. Albaugh.
Titusville	Brevard	16	17	67.8	+ 8.1	86	8	41	4	29	1.09	− 0.29	0.39	0	14	14	12	5	e.	F. M. Taylor.
Wausau	Washington	250	13	.....	.....	81	6	.....	.....	.....	0.72	− 2.66	0.30	0	4	6	19	6	s.	Curtis Jones.

TABLE 1.—*Climatological data for January, 1913. District No. 2*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Alabama.																				
Alaga	Houston	105	8								2.12		0.74	0	6					James L. Willis.
Anniston	Calhoun	728	22	51.2	+ 9.0	74	6	27	28	39	6.28	+ 0.97	2.44	0.2	16	11	7	13	se.	U. S. Weather Bureau
Ashville	St. Clair	685	20	49.6	+ 7.0	73	7	25	4	41	6.17	+ 4.64	1.70	0	8	16	6	9	se.	George R. Cather.
Auburn	Lee	732	31	52.2	+ 6.3	74	6	30	28	33	4.13	− 0.46	2.27	0	12	18	7	16	sw.	Dr. James T. Anderson.
Benton	Lowndes	149	12								8.75	+ 4.93	2.95	0	12					S. T. Pruitt.
Bermuda	Conecuh		26	56.4	+ 7.6	78	7	30	28	39	3.70	− 0.06	1.45	0	9	9	5	17	se.	M. J. Morris.
Birmingham	Jefferson	701	25	52.0	+ 6.7	74	7	26	9	38	8.25	+ 2.93	2.39	T.	15	10	6	15	s.	U. S. Weather Bureau.
Calera	Shelby	500	12								8.25	+ 4.19	2.30	0	13					L. G. Privett.
Camp Hill	Tallapoosa	738	12	50.8	+ 6.1	76	17	27	29	35	5.97	+ 2.15	2.50	0	7	7	3	21	w.	Dr. Lyman Ward.
Cedar Bluff	Cherokee	594	9								7.34		1.65	0	8					Joseph L. Daniel.
Citronelle	Mobile	331	25	58.2	+ 6.3	77	7†	29	28	30	5.60	+ 1.30	1.65	0	11	10	12	9	sw.	Rev. W. H. Rowe.
Clanton	Chilton	590	20	50.5	+ 4.7	76	7	28	4†	40	8.36	+ 4.28	2.29	0	13					Joseph B. Downs.
Cochrane	Pickens	100	3								7.32		2.60	0	12					T. H. G. Cook.
Cordova	Walker	334	22	51.3	+ 8.7	75	7	26	4†	42	9.03	+ 4.14	2.00	0	11	9	0	22	n.	Scott Maxwell.
Cullman	Cullman	802	5	48.0		75	19	22	4	38	7.62		1.61	T.	12	10	9	12	n.	Eugene A. Grayot.
Dadeville	Tallapoosa	760	8								5.24		2.08	0	11					Dr. W. B. Fulton.
Daphne	Baldwin		22	54.1	+ 3.1	78	6†	32	28	32	3.99	+ 0.71	1.20	0	10	12	5	14	nw.	John H. Young.
Demopolis	Marengo		21								8.19	+ 4.28	2.30	0	12					George E. Pegram.
Dothan	Houston		1	57.2		77	6	36	28†	30	1.20		0.36	0	10	13	4	14	ne.	L. G. Biggers.
Eufaula	Barbour	200	29	52.0	+ 5.6	74	24	28	14	34	1.69	− 2.48	0.48	0	11					Dr. J. B. Whitlock.
Evergreen	Conecuh	285	29	56.0	+ 8.1	79	22	31	28	37	4.45	+ 0.46	1.80	0	9					George W. Salter.
Fort Deposit	Lowndes	520	29	55.0	+ 8.5	74	19†	29	3	31	3.82	− 0.23	1.78	0	10					J. F. Hattemer.
Gadsden	Etowah	621	29	51.5	+ 8.8	75	6	27	4	40	7.38	+ 2.27	1.62	T.	10					D. P. Goodhue.
Goodwater	Coosa	826	18	48.3	+ 3.7	72	7	26	28	37	7.27	+ 4.54	2.32	0	15					Miss Daisy Buice.
Greensboro	Hale	220	34	52.9	+ 7.2	75	7	30	9†	35	7.76	+ 2.93	1.87	0	10					W. E. W. Yerby.
Greenville	Butler	444	12								5.03	+ 1.40	1.84	0	7					E. M. Lewis.
Hamilton	Marion		17	51.2	+ 8.9	72	7†	22	28	42	9.33	+ 4.80	1.93	0	14	8	7	16	sw.	Prof. H. O. Sargent.
Healing Springs	Washington	362	21								5.00		1.38	0	10					James E. Lipscomb.
Highland Home	Crenshaw		21	56.2	+ 7.8	77	7	30	28	30	6.23	+ 2.14	2.72	0	10	10	8	13	s.	Prof. Samuel Jordan.
Livingston	Sumter	160	29	52.2	+ 6.7	75	7	29	28†	36	7.55	+ 3.22	1.98	0	11					Robert L. King.
Lock No. 4	Talladega	510	16	51.6	+ 8.5	72	7	25	4	40	5.82	+ 0.74	1.80	0	7	12	4	15	sw.	U. S. Engineers.
Maple Grove	Cherokee		20	48.5	+ 7.1	75	6†	25	3	39	6.13	+ 1.30	1.42	0	9	8	12	11	sw.	Mrs. A. L. Awbrey.
Mentone	Dekalb	1,595	6								6.41		1.10	0.5	13					E. Mason.
Milstead	Macon		10								4.63		2.51	0	9					W. U. Wall.
Mobile	Mobile	84	41	57.4	+ 7.6	74	24	36	28	26	4.29	− 0.56	1.50	0	12	6	11	14	se.	U. S. Weather Bureau.
Montgomery	Montgomery	240	41	54.7	+ 7.0	77	7	32	28	34	4.33	− 0.78	1.90	0	13	9	9	13	se.	Do.
Newbern	Hale		21	53.0	+ 6.7	76	7	28	28	30	9.84	+ 4.27	3.13	0	9	10	8	13	n.	Dr. J. Huggins.
Oneonta	Blount	857	19	52.0	+ 9.5	73	7	24	28	42	7.87	+ 3.20	1.70	2.0	13	10	1	20	s.	Aquilla J. Ketchem.
Opelika	Lee	917	34	50.5	+ 4.7	69	6†	30	3†	28	3.28	− 1.70	1.80	0	9					A. H. Read, jr.
Ozark	Dale	400	11	54.2		76	20	33	28	27	1.60		0.55	0	5					James A. Scott.
Prattville	Autauga	281	13	52.2[d]	+ 5.8	78	7	27		42				0		9	6	16	e.	Joseph B. Bell.
Pushmataha	Choctaw		22	55.6	+ 8.4	77		29	28	39	6.49	+ 1.50	1.50	0	10					W. N. Horn.
Robertsdale	Baldwin	148	1								2.83		1.15	0	12					Carl Boseck.
Selma	Dallas	147	33	52.8	+ 5.1	81	7	30	28†	39	6.00	+ 1.88	2.25	0	9					Charles F. Brislin.
Spring Hill	Mobile	312	9	56.6		77	25	30	28	35	4.50		1.40	0	11	11	6	14	n.	Spring Hill College.
Talladega	Talladega	554	23	52.0	+ 6.6	74	7	27	4†	40	7.03	+ 2.38	2.30	0	8	13	12	6	s.	W. E. Henkel.
Tallassee	Elmore		22								5.63	+ 1.28	3.20	0	11					P. A. Noble.
Thomasville	Clarke	385	22	56.0	+ 8.9	86	19	28	28	42	6.63	+ 2.78	2.00	0	6					Miss H. T. Forster.
Troy	Pike	581	5	56.1		76	6†	31	28	33	3.24		0.68	0	13	9	16	6	s.	Frank L. Zimmerman.
Tuscaloosa	Tuscaloosa	230	32	50.4	+ 6.5	78	6	28	9	39	7.36	+ 2.18	1.81	0	16					W. S. Wyman, jr.
Tuskegee	Macon		13	55.0	+ 6.6	78	6	29	4	40	4.36	+ 1.01	2.78	0	7	8	14	9	s.	Prof. George W. Carver.
Union Springs	Bullock	216	26	54.0	+ 7.9	77	6	32	3†	33	5.44	+ 1.00	1.30	0	8					P. L. Cowan.
Uniontown	Perry	273	27	54.5	+ 7.3	77	2†	30	28	42	8.06	+ 3.53	2.40	0	9	6	6	19	e.	L. H. Moore.
Valley Head	De Kalb	1,031	28	48.4	+ 8.5	72	7	24	4	37	5.94	+ 1.17	1.07	0	11	18	5	8	s.	M. T. Floyd, M. D.
Wetumpka	Elmore	205	21	55.6	+ 7.8	77	7	29	4	40	3.73	− 0.76	2.00	0	7					Mrs. Emmie Callaway.
Mississippi.																				
Aberdeen	Monroe	210	25	50.1	+ 8.1	74	7	26	9†	39	9.46	+ 5.48	1.91	0	11	11	3	17	s.	L. D. Godfrey, jr.
Agricultural College	Oktibbeha	424	23	51.3	+ 6.8	74	20	25	9	41	7.74	+ 2.32	1.80	0	17	8	13	10	se.	J. R. Ricks.
Bay St. Louis	Hancock	28	20	57.8	+ 7.0	70	23†	32	28	28	4.56	− 0.41	1.10	0	17	8	9	14	se.	Brother Stanislaus.
Biloxi	Harrison	24	22	58.8	+ 7.3	71	7†	34	28	24	6.21	+ 2.54	1.57	0	12	8	7	16	se.	Miss M. Josie Pope.
Booneville	Prentiss	504	19	47.8	+ 6.0	72	7	23	9	36	11.26	+ 6.44	1.90	0	19	9	7	15	s.	Dr. D. T. Price.
Brookhaven	Lincoln	500	25	53.5	+ 5.5	75	6†	28	28	37	9.09	+ 3.97	1.84	0	13	4	3	24	s.	W. J. Bee.
Collins	Covington			56.8		77	7	29	28	37	9.61		2.89	0	12	6	10	15	s.	G. P. Sledge.
Columbia	Marion	110	9								9.39		2.22	0	13	8	3	20	nw.	N. R. Drummond.
Columbus	Lowndes	191	25	49.6	+ 5.4	75	7	25	9	41	7.48	+ 2.24	2.06	0	11	11	0	20	se.	J. B. Love.
Crystal Springs	Copiah	468	21	52.8	+ 5.7	76	15	28	9	43	6.87	+ 2.11	2.55	0	11	11	5	15		D. H. Miller.
Edinburg	Leake		5	53.4		76	7	27	1†	43	6.83		2.15	0	12	8	4	19	s.	J. Y. Blocker.
Enterprise	Clarke	248	8								8.08		2.20	0	11	6	3	22	s.	J. B. Thompson.
Fulton	Itawamba		4								8.84		1.39	0	14	8	12	11	s.	A. D. Graham.
Hattiesburg	Forest	189	20								6.00	+ 1.01		0	8	4	1	26	s.	T. C. Spence.
Hazlehurst	Copiah	460	23	53.4	+ 6.0	75	5†	29	9	37	8.34	+ 4.80	2.05	0	13	5	2	24	s.	J. D. Granberry.
Hickory	Newton	326	3								9.31		2.96	0	11	10	3	18	s.	T. N. McMullen.
Jackson	Hinds	280	26	55.6	+ 8.3	76	7	29	8	35	7.44	+ 2.98	2.61	0	17	9	3	19	se.	A. S. Nall.
Lake	Scott	446	25	52.3	+ 6.7	74	7†	30	3†	34	8.12	+ 3.34	2.35	0	11	6	1	24	nw.	Mrs. Eddie McNeel.
Laurel	Jones	241	9	56.1		75	7†	29	28	34	7.94		2.15	0	14	7	10	14	sw.	Thomas W. Flynt.
Leakesville	Greene		19	56.8	+ 6.6	80	20	31	28	33	4.63	+ 0.09	1.38	0	7					Dr. Sam Pool.
Louisville	Winston	561	24	52.8	+ 7.5	74	7	25	9	40	7.70	+ 2.67	2.15	0	12					B. T. Webster.
McNeill	Pearl River	230	10	58.6		75	20	31	28	29	7.85	+ 3.31	1.54	0	12	5	13	13	se.	Prof. E. B. Ferris.
Macon	Noxubee	185	25	51.2	+ 6.1	76	7	26	9	41[d]	6.80	+ 1.66	2.48	0	11	10	1	20	w.	Finis E. Carleton.
Magnolia	Pike	415	17	57.6	+ 7.9	75	7	29	28	41	7.03	+ 1.89	1.35	0	12	5	6	20	s.	Miss Ruby V. Roberts.
Meridian	Lauderdale	375	23	53.2	+ 8.2	75	7	28	9	31	8.89	+ 3.35	2.03	0	14	8	8	15	s.	U. S. Weather Bureau.
Merrill	George	76	8								4.29		1.00	0	15	6	2	23	n.	J. E. Walters.
Monticello	Lawrence	209	6	54.6		77	7	28	28	39	11.64		3.64	0	16	10	8	13	e.	Dr. G. A. Teunisson.
Okolona	Chickasaw	311	25	47.7	+ 6.4	78	7	26	9†	36	8.82	+ 3.99	1.65	0	12	9	1	21	s.	E. J. Henson.
Pascagoula	Jackson	15	4	57.7		70	20†	34	28	23	3.16		1.15	0						McVea Young.
Pearlington	Hancock	10	25	58.6	+ 6.6	75	7	32	28	32[a]	5.37	+ 1.28	1.10	0	10				se.	Miss Annette Koch.
Porterville	Kemper		8	54.2		75	4†	28	1†	43	7.23		2.02	0	10	7	14	10	se.	I. S. Rea.
Shubuta	Clarke	197	8								7.54		2.13	0	13	6	3	22	se.	George A. Floyd.
Tupelo	Lee	278	14	51.4		74	7	27	9	37	8.79	+ 4.23	1.63	0	18	12	3	16	s.	W. S. Vincent.
Waynesboro	Wayne	191	26	54.0	+ 6.8	78	7†	28	28†	38	9.99	+ 5.52	2.80	0	10	7	1	23	n.	R. S. Burke.
Woodland	Chickasaw		4								9.77		3.30	0	10					J. L. Ricks.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
* * Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 2, South Atlantic and East Gulf States.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Virginia.																																	
Arvonia	James			.40					.05			T.	.13						.06			.03		.30	.28	.08		.90		T.	.07	T.	2.30
Ashland	do								T.													.10		.30	.52				T.		.76		1.68
Buchanan	do			.44						.05			.35	.09				.18				.05			.19	.20		.29	.77	.04			2.65
Callaville	Chowan	.30		.44					.35		T.		T.									T.			.85	.21		1.00	.08	.02			3.25
Cape Henry	Coast	.06	.16	.33				T.	.08	T.	T.	.02	T.	.02					T.		T.	.02			.86	.07		1.29		T.		.44	3.35
Catawba	Roanoke			.60					.10				.60						.40					.15		.22				.05		.05	2.17
Charlottesville	James			.68				T.	T.			.08	.09								.20				.25	.05		.78		.15		.04	2.32
Clarksville	Roanoke	.27		.17				.35		.08		.10										.10			.48	.46		.52	.28	T.			2.81
Diamond Springs	Coast									.14	.04											.05			.71	.35		1.49	T.			.28	3.06
Dry Bridge	James	.07		.20				.20	.17			T.	.05						.08			.31		.13	.50	.05		1.04		.04		.05	2.89
Hampton	Coast	.60		.58					.15					.15								.15			.85	.30		1.00				.25	4.03
Hot Springs	James			.37	.03			.59	.22	.02		.03	.23						.29			.08		.13	.23			.79		.03		.27	3.27
Ivor	Chowan	.80		1.60					.10			T.										.15			1.23	.30		1.35					5.53
Lassiter	James	.15		.48									.05						.15			.20			.18			1.55					2.76
Lexington	do			.66			.23	.23					.29						.14					.15	.21			.77		.08		.08	2.84
Lynchburg	do		.01	.21					.03			.01	.17						.15			.01		.16	.27			.68		.13		.08	1.91
Newport News	Coast	.54	.02	.51				.01	.05		.01	.01	.01	.06					.01			.08		.01	.83	.17		.91				.55	3.78
Norfolk	do	.05	.06	.38				T.	.02	T.	T.	.02	T.	T.					T.			.06		T.	.93	.13		1.26		T.		.48	3.39
Randolph	Roanoke	.16		.28									.21	T.								.34	.04		.43	.31	.21	.48	.57	.11			3.14
Richmond	James	.02	.01	.27				.45	.04		T.	.01	T.				T.		.05		T.	.21		.10	.32			1.00		.03		.02	2.53
Roanoke	Roanoke			.50			T.		T.		.03		.31						.10					.08	.08	.03		1.08		.05		.05	2.31
Rocky Mount	do			.64									.10						.10					.21	.33	.04		1.12		.07		.22	2.83
Ruckersville	James			.55				.10	.02				.10				.03		.04					.33	.30	.04		.79		.18		.08	2.56
Spottsville (near)	Chowan		.87						.20		T.	.14							T.		T.	.11			.97			1.02				.16	3.47
Williamsburg	James	.40		.42				T.	.25										T.			.48			.42	.15		1.15	.15				3.42
North Carolina.																																	
Albemarle	Pedee	.14	.03	.31				.09				.03						T.				.17		.02	1.01	.72		1.92					4.44
Beaufort	Coast	.13	.50	.68				.18	.04		.03		.29								.04			.80	.03			.10	.11			.14	3.07
Brewers	Pedee			.52			.03	T.	.08		.01		.22						.44		T.	.12	T.	.14	.29	.06	1.17		.02	.01		.24	3.35
Caroleen	Santee			.67			T.	T.				.05	.12						.15		.02	.33		.63	.97	.16		2.18	.02			.45	5.75
Charlotte	do		.10	.11			T.	.01	T.			.01	.01					T.	T.	.01	.03	.23	T.	.27	1.44		.01	1.38				.09	3.70
Chimney Rock	do			.36															.60			.20		.40	.85	.04		1.90				.30	4.65
Durham (near)	Neuse			.18								.06	.18								.14				.80	.32		1.13		.18			2.99
Eagletown	Chowan		T.	.60			T.	.10	.20		T.	.12	T.	T.					T.		T.	.10		T.	.85	.76	T.	1.31		T.		T.	4.04
Edenton	Coast		.50	.60																	.10		.20		1.00	.10	.20	1.75				.25	4.70
Elizabeth City	Pasquotank	.75		.60											.25										.65	1.95		2.00			T.		6.20
Elizabethtown	Cape Fear			.86				.78							.15	.45											.96			.99			4.19
Enfield (near)	Tar	.48		.64				.22				.22											.13		.50	.90	.60	1.10	.85				5.64
Fayetteville	Cape Fear	.44		.85				1.10	.08			.04	.08									.05	.03		T.	.30		.15	.40				3.52
Globe (near)	Santee			.48				.10					.25						.27					.15	.35			1.09				.27	2.96
Goldsboro	Neuse	.58		.43				.22				.22													.30	.60		.20	1.10				3.65
Gorge (near)	Santee			.42			.05	.06	.04				.26						.39			.26		.30	.04	.27		1.08	.28			.20	3.65
Graham	Cape Fear			.52				.15					.17	T.								.16	.06	.02	.68	1.23		.70	.70				4.39
Greensboro	do	.98											.20									.28	.07	.18	.78	1.03		1.20	.54				5.26
Greenville	Tar	.75		.37	.01			.03	.04			.18	.09									.11	.02		.37	1.04	.05	.93	.69	T.			4.65
Hatteras	Coast	.08	.98	.77			T.	.08	.04			T.	.02	.09				T.			.15	.02		.84	.01	.01		.23	.10			.20	3.62
Henderson	Tar and Roanoke		.37	.25			T.	.22	T.		T.	.03	T.									.31			1.31	.18		1.14				.12	3.93
Hickory	Santee			.40				.05	.01				.28								.11	.21		.49	.83	.03		1.85				.29	4.55
Kings Mountain	do			.30					.06				.08									.18		.25	1.47			1.85	.03			.40	4.62
Kinston	Neuse	.61		.50				.13	.05			.20	.11								.20			T.	.06			.43	.19			.50	2.98
Lincolnton	Santee	.03		.34								.05	.11									.33		.41		1.26		1.35				.43	4.31
Louisburg	Tar	.21		1.14				.15	T.			.03	.08										.21		.39	1.09	.03	1.16	.73	T.			5.22
Lumberton	Lumber	.37		.67				.41	.02			.12	.01	T.								.01	T.			.14		.14	.25				2.14
Manteo	Coast		.12	.30																				.40	.44			.12				.18	1.56
Marion	Santee			.51		T.	.03		.01				.30						.19		.02	.11		.40	.53	.02		1.49				.15	3.76
Middletown	Coast	.19		.87					.08												.07			.20		.03		.34	.13				1.91
Moncure	Cape Fear	.32		.54				.04														.06			.74	1.67	.03	1.05	.99				5.44
Monroe	Pedee	.13		.25				.10				T.						T.	T.						1.77	1.13		1.13				.17	4.68
Morgantown	Santee	T.		.46			T.						.25						.20			.25	T.	.39	.78	.05		1.69	T.			.24	4.31
Mount Airy	Pedee			.44				.03		.08			.20						.42			.20		.13	.30	.04		1.28		.02		.32	3.46
Mount Holly	Santee	.14		.73									.12	.04					.02			.40	.04	.10	.36	1.85		1.14	.65				5.59
Nashville	Tar	.48		.60				.31		.12		.04	.03	.02								T.	.09	T.	.10	2.08	.18	.98	1.01	T.			6.04
Neuse	Neuse	.41		.92				.39					.02									T.	.09		.37	1.21	.37	1.05	.90				5.73
Newbern	do	.30		.68				T.	.09			T.	.28									.05	T.		.05	.10	T.	.03	.30				1.88
North Wilkesboro (near)	Pedee			.60					.10				.20						.39			.28		.33	.42			1.56				.34	4.22
Parkersburg	Cape Fear							1.30			T.	.35																.80					2.45
Pinehurst	Lumber				.86				.07													.03		1.28		1.05		1.34			.07		4.70
Pittsboro	Cape Fear		.10																			.10		1.00	1.20	.05	1.03	.10				3.58
Raleigh	Neuse	.05	.42	.64			.23	.10	T.		.01	.03	T.									.05		T.	1.85	.35	.01	2.15	T.	T.		.06	5.95
Ramseur	Cape Fear	.16		.21				.08				.02	.05									.19		.04	.72	.50		1.43				.15	3.55
Randleman	do	.20		.26				.10						T.						T.		.10	.05		.50	1.45	.20	1.05	.80				4.71
Reidsville	do			.25								.12		.15					.05			.18	.04	.07	.52	.50		.81	.74				3.43
Rock House	Savannah		T.	.48	T.	.05	.22	.13	.46		.04	.18	.63					.01	.32		.65			.98	.91		.01	1.78	T.			.45	7.30
Rockingham	Pedee		.40				.20	.05				.05												.42	1.20		.80	.40			.18		3.70
Rocky Mount	Tar	.50		.51					.10	.08		.08									.10				.45	1.28	.20	1.25	.65				5.20
Salem	Pedee												.32										.28	.22	.70	.50		.84	.55				3.41
Salisbury	do																																
Saxon	Roanoke			.41					.43				.08						.10			1.79		.09	.70	1.47		1.10	.36				5.51
Scotland Neck	Tar			.57				.16		.07		.09	.03									.30			.66	.17		1.50			.25		3.90
Settle	Pedee			.50				T.		T.		.27							.09			.04			.64	1.08	.04	1.08					3.80
Sloan	Cape Fear		.76					.31			.04	.10	T.								.16	.46		.39	.87	.07		1.72				.42	4.79
Smithfield	Neuse	.55		.72				.50				.08	.04									.05		.05			T.	.07				T.	1.49
Southern Pines	Cape Fear			1.05				.05	.05		T.		.15										.02	2.00	.60	.01	.40	.74					5.16
Southport	do		.18	.70				.11	.12		.03	.06	.19										.15	.09			1.20					.15	5.40
Statesville	Pedee			.41									.60									.26		.76	.36			.08	.01			.21	1.78
Tarboro	Tar	.58		.50				.19	.02	T.		.10	T.	T.									.08		.70	2.00	.52	1.94	.66				4.69
Tryon (near)	Santee			.52			.31		.16			.01	.18						.23		.02	.45		.60	.63	.11		.92	.66				6.27
Weldon	Roanoke	.48		.58				.02	T.	.01		.01	T.	T.								.02	.06		.27	.85	T.	2.75	.06		T.		.45	6.48
Willard	Cape Fear	.56		1.00				.24			.10	.13												T.				.63	.66				3.59
Wilmington	do	.02	.47	.37			T.	.31	.02		.02	.12	.01											.07	T.			.19				.15	2.37
																									.18	.01					.20	1.80

TABLE 2.—*Daily precipitation for January, 1913. District No. 2*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
South Carolina.																																	
Aiken	Edisto		.55										.30																			0.85
Allendale ‖	Savannah			.90																								T.					0.90
Anderson	do	.06		.25					.26				.38						.14			.22		.47	.80	.25		1.59	.02			.45	4.89
Batesburg ‖	Edisto	.87		1.22								.22	.04												.37	.50		.12	.73				4.07
Beaufort	Coast						.85	.05	4.00																		.65						5.55
Blackville ‖	Edisto	.64		.63				.03	T.			.05		.03				.03				.06				.39		.30	.05	.03			2.24
Blairs ‖	Broad			.20								.10													.70	.20		.40					1.60
Bowman	Edisto		1.03				.35		.05	T.			.07								T.							.15				.12	1.77
Calhoun Falls ‖	Savannah	.12											.22						.03	.36				.06	.89	2.40		1.76	.04			T.	5.88
Camden ‖	Wateree	.22		.89				.08	.06	.05												.10			.24	.34		.10	.51				2.59
Catawba ‖	Catawba	.12		.25						.09			.06									.20			1.66	1.34		.84	.36				4.88
Chappells ‖	Saluda																								.82	1.77		.23	.08				2.90
Charleston	Coast	.03	.58	.03			T.	.04	T.	T.	.07	.03	.02				T.	T.						.10	T.			.05	.02			T.	0.99
Cheraw ‖	Pedee	.28		.88				.10	.02					.05											.05	.42		.32	.55				2.67
Clemson College	Savannah		.30					.04	.13										.26		.11	.43		1.00	.81			1.80				.32	5.20
Columbia	Congaree		.51	.01			T.	T.	T.				.03					T.	T.		.01	.01		.04	.62	.01		.16	T.			.16	1.56
Conway ‖	Waccamaw	.95		.94	T.		T.	T.	.66		T.	.15	T.													.10	T.					2.80
Darlington ‖	Pedee			1.03				.24				.17														.23		.06	.17				1.90
Dillon	Little Pedee						T.	.30	T.		.04	.21	T.						T.		T.			T.				.32	.01			.11	0.99
Edisto ‖	Edisto	.84		1.12				.30				.11		.04															.12				2.53
Effingham ‖	Lynches	.93		.87				.75				.05	T.															T.	.25				2.85
Ferguson ‖	Santee	1.30		.52				.50	.10			.17										.22											2.81
Florence ‖	Pedee	.43		1.80				.49	.15	.11										T.				T.		.06		.29	.20				3.53
Gaston Shoals ‖	Broad			.39					T.				.12						.10			.21	.01	.12	.43	1.34		1.55	.36				4.63
Georgetown	Coast	.25					T.	T.																				.25					0.50
Greenville ‖	Saluda			.34				.05		.13		T.	.21						.15			.57		.36	1.05	.35			1.95			.52	5.68
Greenwood ‖	do												.22							.11		.19		.19	.72	3.20		1.05	.65				6.33
Heath Springs	Wateree	.10	.28						.11				.14											1.98				73					2.34
Kingstree ‖	Black	1.30		.55				.47		.05		.45										.24						.50	.49				4.05
Liberty	Savannah			.15		.02	.04	.02	.10		.01	.02						.32	.25		.25	.10		.40	1.10			1.80				.50	5.08
Little Mountain	Saluda																								.72	.50		.31	.02			.32	1.87
Meriwether	Savannah			.46					T.			T.							T.		T.			.31				.45	.07			.30	1.59
Monetta	Edisto	.07		.45				T.	.01			.12	.04												.31	.28	T.	.26	.03			.24	1.81
Newberry	Saluda	.04		.40				T.	.56		T.	.05	.10						.02			.05	.09		1.22	1.18		.64				.15	4.50
Pelzer ‖	do	.02		.26					.12	.04			.28	.02					.10	.08		.42	.02	.24	.76	.96		1.76	.12				5.20
Pinopolis	Cooper		.65					1.05				.50								10							.49	.02	.10				2.91
St. George ‖	Edisto	1.55		.60				.05	.10																				.30			.30	2.90
St. Matthews ‖	Santee	.65	1.20					.25	.15			.10														.07			.47				2.89
Saluda	Saluda			.29									.15									.16			.50	.50	.30					.18	2.08
Santuc	Broad	.10		.38				T.	.04				.15						.05		.03	.05		.12	2.05	.68		1.75				.18	5.58
Smiths Mills ‖	Pedee	.43		.76				.33	.69			.08										T.						.18	.09				2.56
Society Hill	do		1.05				.25	.02					.08								.02				.32		.10	.80				.20	2.84
Spartanburg ‖	Broad	.05		.37			.02		T.			.02	.11						.12	.05		.25		.15	.52	.95		1.70	.37				4.68
Summerville	Ashley	.40	.48	.31			1.72	.04	T.		.03	.20	.05			T.		T.			.21			.03			T.	.21	.04			T.	3.72
Trenton	Edisto	.07	.18	.20				.10					.15													.19	.30			.32			.18	1.69
Walterboro	Ashepoo	1.10	.15	.12			.15	1.20	.10										.10		.04			.03									2.99
Winnsboro	Broad		1.82								T.	.62												T.	.78			1.00				.45	4.67
Winthrop College	Catawba		.30																			.25	.05		1.25	.80		1.40				.20	4.25
Yemassee ‖	Combahee	2.70	T.	.40				.39	.07	.02				.03					T.			.19							.15	.24	.01			4.20
Georgia.																																	
Abbeville ‖	Ocmulgee	1.26		1.46					T.	T.		T.	.15	.02											.09	.24		.40					3.62
Adairsville	Coosa			T.								.95	.91						.77		T.	.20		.30	.12				1.20			.50	4.95
Albany ‖	Flint	.65	.02	.57					T.	.40	T.	T.	.25								T.	.02			.04	.20		.31					2.46
Allapaha ‖	Allapaha	2.00		1.00					.01			.02		.08										.02		.02		.26					3.41
Athens ‖	Oconee	.09		.23					.04	.14			.24						.12	.02		.08		.26	.50	.74		2.00	.07				4.53
Atlanta	Chat'ho'chee	.01	.07	.01		T.		T.	.28		T.	.01	.46						.20		.06	.05		.29	.92	.01	1.53	1.35				.51	5.76
Augusta	Savannah		.36	.07				T.	.05		.04	.08	.05								.39			.01	.28	T.	.02	.11	.02			.11	1.59
Bainbridge ‖	Flint	1.40		1.94					.05			.13	.02						.08				T.		.25	T.	.62						4.49
Butler ‖	do			.30									.25												.65		.46	.10					1.76
Camak ‖	Savannah	.30		.42									.25									T.		T.	.28	.61		.62	.17				2.65
Canton ‖	Coosa			.46	T.					.08	T.		.71						.48			.11			.40	.30	.07	2.20					4.81
Carlton ‖	Savannah	.11		.17						.09									.12	.04		.10		.23	1.04	1.24		1.60	.07				4.81
Clayton	do			T.		.35	.08		.48			.11	.69						.24		.38	T.		.77	.65			1.63				.31	5.69
Columbus ‖	Chat'ho'chee	.10	T.	.17					.05	T.		T.	.30						T.	T.		.10			.20	.30	.03	.40					1.65
Concord ‖	Flint		.12					.06					.20						.10					.20	.22	.03	.85	.04	.50				2.32
Covington ‖	Ocmulgee			.30						.10		.05	.25						.10	.05			.05	.10	.60	1.00		1.40					4.00
Dahlonega	Chat'ho'chee			.09		.02		.05	.16		.02	.10	.79						.51		.13	.18		.40	.92	.03		1.75				.46	5.61
Diamond	Tennessee			.78				T.	1.20		.08	.02	1.65						.12		T.	.29		.04	1.80	.04		.81				.48	7.31
Dublin ‖	Oconee	.65		.60								.03		.25						T.		.20			.21	.20	.05	.34	.05				2.58
Eastman ‖	Ocmulgee	.88		.89					T.	T.		.04												.04	.07	.07	.07	.33	.01				2.40
Eatonton	Oconee							.07	.03										.05			.05		.08	.68	.05		.36	.04			.24	1.65
Elberton	Savannah	.15		.15				T	.16			T.	.20						.12			T.		.20	2.10	.70	2.32					.40	6.50
Experiment	Ocmulgee			.16									.26						.06					.16				.65				.35	1.64
Fort Gaines ‖	Chat'ho'chee	.22		.05					T.	.40			.30						.05			T.			.20		.25					1.47
Gainesville ‖	do			.40					.10			.10	.50						.32			.15			.60	.65		2.30					5.12
Gillsville ‖	Savannah			.50				.45	.10				.60						.25					.05	.58	.58		2.00	.18			.30	5.59
Glennville	Altamaha		.60						.09				.06											T.	.15			.08				.05	1.03
Gore	Coosa			.65		.03		T.	.27			.02	.97						.01	.83		.02	.29		.05	.98	.04		1.00				.75	5.91
Granite Hill	Ogeechee		.24	.11			.02	.03	.06		.02	.01	.16										.03		.10	.56	T.	.02	.42	.08			.13	1.99
Greensboro ‖	Oconee												.46									.11		.05	.73	.83		.76	.08				3.02
Griffin ‖	Ocmulgee	.46		.19									.44						.12			.10			.40	.32		.99					3.02
Harrison	Ogeechee		.70																			.10				.40		.25					1.45
Hawkinsville ‖	Ocmulgee	.55		.75																		.02			.20	.45	.06	.66					2.69
Lisbon	Savannah			.16					.02				.13						.03			.02		.15	2.03	.58		1.00	.07			.25	4.44
Lost Mountain	Chat'ho'chee	.80											.75						.41			.11		.18	.60			2.60				.32	5.77
Louisville	Ogeechee		.55										.17								.08				.50			.12				.34	1.76
Lumber City ‖	Ocmulgee	1.67		.78						.52																.25		.20	.02				3.44
Macon	do		.11	.01					.04				.24						.01					.13	.46	.04	.01	.52	.01			.29	1.87
Marshallville ‖	Flint	.39		.25					.05				.10						T.			T.			.28	.25	T.	.40				T.	1.72
Milledgeville ‖	Oconee	.28		.32					.03	.10		.02	.22									T.		.07	.34	.36	.05	.40	.14				2.33
Millen ‖	Ogeechee	1.00		.70																			.20		.35	.15	.15	T.					2.55
Montezuma ‖	Flint	.47		.11				.01	T.				.16						T.	.11		T.		T.	.30	.30	.03	.26	.11				1.86
Monticello ‖	Ocmulgee	.13		.08				.03	.06	.02			.18						.06	.03		.05		.10	.12	2.10		.78	.05				3.79
Newnan ‖	Chat'ho'chee	.05		.30					.20	.10		T.	.56						.21			.10			.45	.80		2.00					4.77
Norcross ‖	do			.22					.36	.04		.04	.54						.28			.12			.48	.68		2.84	.06				5.66
Point Peter	Savannah	.15		.15					.10				.22						.15						2.05	1.50		1.85				.45	6.62
Poulan	Suwanee	.27	1.33	.08				.01	.12				.20												.03	.41	.01	.92				.35	3.73
Quitman ‖	do	2.14		1.80						.10				.21												1.11		.66					6.02

TABLE 2.—*Daily precipitation for January, 1913. District No. 2*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Georgia—Continued.																																	
Ramhurst	Coosa			.55		T.		.10	.40		.10	.07	.68						.55	.05	.06	.35	.05	.06	1.25	.15		.85				.65	5.92
Resaca ‖	do		.30			T.	.07		.32			1.02							.60			.32	T.		1.50	.22		.90					5.25
Rome ‖	do			.50		T.			.50		T.	.05	.95						.85	T.		.25			.48	.18		1.64	.07			.13	5.60
St. George ‖	St. Marys	.35	1.15	T.																					.16		.43	.19				.07	2.35
St. Marys	do		.81						.34			T.	.18															.14				.03	1.06
Savannah	Savannah	T.	.54	.02			.17	.01	.10		.02		.05				.04					T.		T.	.01	.02		.24	.06	T.		T.	1.24
Statesboro	Ogeechee		.52	T.				T.	T.				T.			T.		T.							T.	.13	T.	.46					1.11
Talbotton	Chat'ho'chee		.16						.18				.20						.15				.45	.68		.13		.71				.45	3.11
Tallapoosa ‖	Tallapoosa			T.					.75				.86						.56			.26			.16	.12		2.60				.26	5.57
Thomasville	Ocklocknee		.64					.03	.05				.20						.01			.01			.01	T.	.05	.60				.05	1.65
Tifton	Suwanee		.43						.34			T.	.18													.25		.33				.22	1.75
Toccoa ‖	Savannah			.35			.03		.25			.03	.45						.25			.20			.38	.47		1.60	.15				4.16
Valdosta ‖	Suwanee	1.60		.75					T.																	1.25		.60					4.20
Valona	Coast		1.05	.90																							.75						2.70
Washington ‖	Savannah	.12											.23									.24	.06	.22	.24	1.57		.37	.95				4.00
Waycross ‖	Satilla	1.65		.65						.02															.03	.24		.28					2.87
Waynesboro ‖	Savannah	.40								.02			.24					T.							.30	.15	.22		.35				1.68
West Point ‖	Chat'ho'chee	.06		.20					.02			.02	.56						.15		T.	.08		.02	.42	.36	.03	1.73				T.	3.65
Woodbury ‖	Flint			.21									.31						.08			.09			.15	.21		1.04					2.09
Florida.																																	
Apalachicola	Coast		.75																								.10	2.00				.13	2.98
Arcadia	Peace Creek		.16	.37		T.				.04																		.61				.16	1.34
Archer	Waccasassa	1.05	.27	.85																							.01	.64				.55	3.37
Avon Park	Kissimmee	.03	.02	.66							T.												35					.29				.37	1.72
Bartow ‖	Peace Creek	.09	.09	.55																									.60				1.33
Brooksville	Withlac'chee	.58																										.50					1.08
Carrabelle	Coast		1.10																									1.30				.20	2.60
Cedar Keys	do	.85	.52	.95																												.65	2.97
Clermont	Lake	.12	1.00																									.25				.10	1.47
De Funiak Springs	Choctawhatchee.			T.	T.								.35									.22						.87					1.44
De Land	St. Johns	.31		.35																								.05					0.71
Eustis ‖	Lake	.36	.08	.78												T.	T.																1.22
Federal Point	St. Johns	.26	.05	.38					.03	T.	T.	.02	T.	.03			.08	.02	.01						.01			.07					0.96
Fenholloway	Fenholloway																																‡1.61
Fernandina ‖	Coast	.14	.02	1.08	.02	.04		.03			T.	.02	T.	.02			.01	.05	.02	T.	T.	.01	T.	T.	T.	.03	T.	.64	.03	T.	T.	T.	2.16
Fort Lauderdale ‖	do			.32			.02	.02			.04		T.	.05		T.	.30	.17	.25	.30								.25				T.	1.72
Fort Meade	Peace Creek																										1.36					T.	1.36
Fort Myers	Caloosahatchee.	T.	.04														T.	.03			.15						2.20						2.42
Fort Pierce	Indian			.40							.10				1.30													.70					2.50
Gainesville ‖	Lake	.54	.58	1.45										.06												.10		.06	.15				2.94
Garniers (near)	Coast								.27			.01	.21						.33	.02		.01		.02	.03	T.	.02	.37				.08	1.37
Grasmere	Lake	.27	.04	.49			T.											T.										.20				.16	1.16
Hilliard	Nassau	.20	1.55														10									.40							2.25
Homestead	Coast	.02				.02									.27	.48									.08	.15	.74	.16		.07			1.99
Hypoluxo	Lake			.50					.07				.02		.02	.28	.03			.34	.12	.10					.14	.05			1.56		3.23
Inverness ‖	Withlac'chee	.15	.38																								.21						0.74
Jacksonville	St. Johns	T.	1.02							T.	.01		.02			T.	T.	T.							.01		.05	.25				.17	1.53
Jasper	Suwanee	.48	.40	.10									.45													.25	.45	.49				.05	2.67
Johnstown	do	.12	.30										.02												.32		.02	.34				.80	1.92
Key West	Coast			.22		.01				.02		T.		T.			.08	.05	.09	.01			.22		.03	.01		.74	.12		T.	.02	1.62
Kissimmee	Kissimmee			.27				T.		.14																		.13					0.54
Lake City	Suwanee	.51	1.70	1.36						T.			.20													.10	.23	.31				.12	4.53
Lucerne Park	Peace Creek	.20		.34																								.34					0.88
Macclenny	St. Marys	.17	.46	.27																								1.08				.17	2.15
Madison ‖	Suwanee	1.44	.02	.56		.01			.21			.01		.22													.04	.62					3.13
Malabar	Indian		.03	.55			.07			.05			.02		.26		.02					.13	.01					.11				.01	1.26
Marianna ‖	Apalachicola			.11				T.	.02					.10												.14		.40					0.77
Merritts Island	Indian	.02		.38			T.	.09		.02	.05					T.												.95				T.	1.51
Miami	Coast		T.	.54			.05									1.22	.06	.12	1.76	.17		.09						.29	.09			.03	4.42
Middleburg	St. Johns	.41	1.00	.33										.06				.03										.09					1.92
Molino	Escambia	1.00						.28					.45						.72								1.33					.35	4.13
Monticello	Aucilla		.75						.72																2.40	1.04							4.91
Mount Pleasant	Apalachicola	.05	1.57	.06				T.	.17				.15															.27				T.	2.27
Newport	St. Marks		.81					.02	.09				.09									.04			.07			.83				.02	1.97
New Smyrna ‖	Coast	T.	.57								T.	.05						.08								.13		.01				0.84
Ocala	St. Johns	.16	.50																			.18			.26	T.		.27			T.		1.37
Orange City	do	.18															T.						.51					.05				.04	0.78
Orlando	do	.36	.05	.21			T.	T.			T.						T.	T.							T.	T.		.20				.10	0.92
Pensacola	Coast		.02			.01	.03	T.	.26		T.	.02	.12						.56		.35			.08	.10	.10	.40	T.				.12	2.17
Plant City	Hillsboro	.48		.26																								.42				.17	1.33
Ritta	Withlac'chee														.40	.20												.50					1.10
St. Andrew	Coast	.10	.05				.01	.07					.15					.04			.12			.42	.03		.05	.60					1.64
St. Augustine	do	.10	.40																														0.50
St. Leo	Withlac'chee	.38	.03	.99																		.20						.69					2.29
Sand Key	Coast			.15		T.				T.				.01		.05	.11	.03	.05	.08		T.	.02	T.	T.	T.		.61	.01		T.	T.	1.12
Satsuma Heights	St. Johns	.06	.04	.41			.02			T.	T.	T.	T.				T.							T.	.06	T.		.08				.43	1.10
Switzerland	do		.50						.10	.02			.04				.14											.05				.03	0.88
Tallahassee ‖	Ocklocknee	2.50		.55					.25				.05													.60		.75					4.70
Tampa	Coast	.14	.39	.01																					T.			.55					1.09
Tarpon Springs	do	.68	.44	.17																								.56					1.85
Titusville	Indian	.07	.05	.39			.02		.02	.05	.05	.06		.01		.02	.10			.02			.18					.05					1.09
Wausau	Choct'h'chee		T.	.30				T.																	T.	.14		.19				.09	0.72
Alabama.																																	
Alaga ‖	Chat'h'chee	.86	T.	T.					T.				T.	.02					T.	.26					.24	T.		.74					2.12
Anniston	Coosa	.01	.60	.03		T.	T.	T.	.32		T.	T.	.65					.08	.56	.01	.07	.08		.47	.50	.02	1.65	.79				.44	6.28
Ashville	do			.33								.46	.60						.92			.27		1.20			1.70					.69	6.17
Auburn	Tallapoosa			.11				T.	.13			T.	.46						.12		.02	.02		.11	.48	.05	.05	2.22				.36	4.13
Benton ‖	Alabama			.89					.47				1.42						1.12		.14			T.	.34			2.95				1.42	8.75
Bermuda	Escambia		T.	.10				T.	.10			.02	.73						.27		T.			.37	.34	.07	1.45	.02				.23	3.70
Birmingham	Bl'k Warrior		.96	T.			.03	T.	.51		.01	.02	.69					.67	.28	T.	.20	.01		.82	.94		2.03	.37				.71	8.25
Calera ‖	Coosa			.50			.05		.60	T.	T.	T.	.70						.75	.02		.22			.35	1.86	.02	2.30				.88	8.25
Camp Hill	Tallapoosa								.60				.71			.21							.20	.75				2.50				1.00	5.97
Cedar Bluff	Coosa			.90				1.10			.60		1.65					1.00				.75							.80			.54	7.34
Citronelle	Alabama		.02				.25		.17				1.02						.85					.18	.98	.06	1.65	.05				.37	5.60
Clanton ‖	Coosa			.53			.02		.48	.01		.08	.80						.52			.06			.40	1.85		2.29	.32			1.00	8.36
Cochrane ‖	Tombigbee				.45		.25	.15	.10					1.00					.80			.30			1.00	.19		2.60				.48	7.32

TABLE 2.—*Daily precipitation for January, 1913. District No. 2*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Alabama—Contd.																																	
Cordova	Bl'k Warrior		1.00			.20	.08					2.00						1.00			.35		1.00	1.00			.70	1.00			.70		9.03
Cullman	do			1.61				.42				.25	1.00								1.30		.40	.42	.50	.50	.06	.86				.30	7.62
Dadeville ‖	Tallapoosa			.45					.20				.65						.28			.20			.59	.79		2.08					5.24
Daphne	Coast		.02			T.	.05	T.	.12		T.		.42						.57					T.	.33	.05	1.18	1.20				.05	3.99
Demopolis ‖	Tombigbee			.20			.33		.33			1.23							.80	.02		.12		.03	.25	2.30		1.53				1.05	8.19
Dothan	Coast	.18	T.					.01	.28	T.		.02	.13	T.					.12	.02				.02	.06	T.	.36						1.20
Eufaula ‖	Chat'h'chee	.10		.04					.10	.05			.24						.10	.04		.02		.04	.48	T.	.48	T.					1.69
Evergreen ‖	Escambia	.08		.08					.21				.62						.38							.36	.08	1.80				.84	4.45
Fort Deposit ‖	do								.08				.52						.43	T.	.05	.05	.25		.25	.38	.03	1.78	T.			T.	3.82
Gadsden ‖	Coosa	T.		.56					.60			1.10							.98			.40		1.00	.48		1.56	.06			.64	7.38
Goodwater ‖	do	.05		.27					.47		.05	.02	.73						.30	.06		.24			.18	1.74	.12	2.20	.03			.81	7.27
Greensboro ‖	Bl'k Warrior		.35				.36	.15				.68						.69			.22			.73	1.87		1.63				1.08	7.76
Greenville ‖	Escambia			.29										.94										1.84		1.76					.20	5.03
Hamilton	Tombigbee		.64	.34			.48	1.93	.50	T.			.85					.10	.70	.05				.60	.72	.72	.10	1.60					9.33
Healing Springs ‖	do			.35		T.	.27	.08				.27						.65						.40	.51	.13	1.38	T.			.96		5.00
Highland Home	Escambia		.25						.11			T.	.68						.35					.04	1.28	.05	.52	2.20		.75			6.23
Livingston ‖	Tombigbee				.30		.05	.16	.44				.64						.53			.32			.82	1.27		1.98				1.04	7.55
Lock No. 4 ‖	Coosa			.56					.76				.68									.22			1.20		1.80				.60	5.82
Maple Grove	do		.46		T.		T.	.46		T.	T.	.73						1.00	T.		.26		T.	.76	.46		1.42	T.			.58		6.13
Mentone ‖	do			.55				T.	.50			.22	.74						.97			.43		T.	.71	.43		1.10				.76	6.41
Milstead ‖	Tallapoosa	.10		.30					.20				.40						.32				.20					2.51				.60	4.63
Mobile	Coast		T.			T.	.06	.14	.06		T.		.38						.66			.01		.14	.42	.12	1.47	.03				.80	4.29
Montgomery	Alabama		.15				T.	T.	.19			.02	.68						.38		.01	.06		.07	.56	.06	1.62	.28				.25	4.33
Newbern	Bl'k Warrior		.62				.34	.34			T.	1.25							.76		.15				3.13		1.75					1.50	9.84
Oneonta	do			.91			.06	.06	.25			.05	1.31						1.05			.35		.10	1.70	.10		1.40				.53	7.87
Opelika ‖	Tallapoosa	.06							.17				.45						.11			.07			.37	.20	.05	1.80	T.			T.	3.28
Ozark ‖	Coast			.15						.25		.55							.10			T.			T.			.55					1.60
Pushmataha	Tombigbee		.18			.04	.61	.61					.99						.80			.10			1.50		.26	1.40					6.49
Robertsdale	Coast		.12				.03		.18			T.	.31						.59					.05	.27	.05	.55	.60				.08	2.83
Selma ‖	Alabama			.20			.06		.43				.44						.55			T.		.07	T.	1.60		2.25				.40	6.00
Springhill ‖	Coast	T.		.01		T.		.40			.10								.60	.09				.04	.04	.60	.72	1.40				.50	4.50
Talladega	Coosa		.60						.44		T.	.92							.72			.24			1.09	T.	T.	2.30				.72	7.03
Tallassee ‖	Tallapoosa	.04		.32					.11			.02	.52						.19			.08		T.	.07	1.04	.03	3.20	.01				5.03
Thomasville ‖	Tombigbee			.58										1.85					.65							.69		2.00				.86	6.03
Troy	Escambia		T.	.11			T.	.01	.03			.02	.68						.28			.03		.24	.39	.03	.17	.61				.64	3.24
Tuscaloosa	Bl'k Warrior			.84		.01	.19	.08	.28		.02		1.05						.79	.02		.10		.24	.84	.46		1.78	.03			.63	7.36
Tuskegee	Tallapoosa			.08					.04				.48						T.					.37	.27		2.78					.34	4.36
Union Springs ‖	do	.43		.28					.25				.79						.96						1.30	.45		.98		T.			5.44
Uniontown	Bl'k Warrior		.35						.84				.65						.64					.20	2.40	.55	1.78					.65	8.06
Valley Head	Coosa			.60		T.		.18	.18		T.	T.	.62					T.	1.00			.42		.29	.82	.08		1.07				.68	5.94
Wetumpka ‖	do			.23					.15				.66						.29						.30			2.00				.10	3.73
Mississippi.																																	
Aberdeen ‖	Tombigbee			.51			.07	1.59	.55				1.68						1.34			.59		T.	.30	.52		1.91				.40	9.46
Agricultural College	do		.60	.10		.01	.20		.39			.30	.72					.60	1.15	.02		.50		.25	.30	.10	.40	1.80				.30	7.74
Bay St. Louis	Coast	.02	.02			.01	.03	.03	.14	.01		T.	.64					.02	1.10		.02		.05		.65	.31	.49	.46				.56	4.56
Biloxi	do					.02	.05	.02	.13				.47					T.	.67					.35	.85	.52	.47	1.10				1.56	6.21
Booneville	Tombigbee		.61			.20	1.65	.42	.65	.21		.35	.68					1.10	.29	.02	.40	.30		1.02	1.90	.02	.02	1.02				.40	11.26
Brookhaven ‖	Pearl			.20			.05	.30	.53		.05		1.77					.03	1.72					.02	1.50	.68		1.84				.40	9.09
Collins	Leaf		.13			.05	.17		.59				1.52						.86					.04	2.89	.02	1.04	1.20				1.10	9.61
Columbia ‖	Pearl			.12		T.	.50	.18	.93			.08	1.30						1.12					.08	.35	1.83	.03	2.22				.65	9.39
Columbus ‖	Tombigbee			.78		T.	T.	.93	.30				1.71						.67	T.		.25		T.	.23	.24		2.03	.03			.31	7.48
Crystal Springs ‖	Pearl			.43				.45	.35		.05		.15						1.35			.03			1.10	.05		2.55				.36	6.87
Edinburg	do			.33			.11	.54	.26				1.35					T.	1.09		T.	.04		.01	.54	.25		2.15				.16	6.83
Enterprise ‖	Chic'sawhay			.40			.28	.25	.30				1.03						.85	.05					1.20	1.00		1.92				.80	8.08
Fulton	Tombigbee		.80	.10			.25	1.33	.32			.06	1.00						.98	.60	.02		.63		.42	.94		1.39					8.84
Hattiesburg ‖	Leaf			.12			1.36					T.	.72							.78				T.	.32	1.02		1.24				.44	6.00
Hazlehurst ‖	Pearl						.12	.22	.87		.10		.30						.07	1.90	.03		.03			1.50	.06		2.05				1.09	8.34
Hickory ‖	Chic'sawhay		.63				.23		.45				1.05										.36		.03	2.96		1.20	1.35				1.05	9.31
Jackson	Pearl		.09			.04	.38	.32	.41		.02	.01	.31					T.	.11	1.25	T.	T.	.06		.46	1.12	.02	1.88	.73			T.	.23	7.44
Lake ‖	do			.37			.20	.08	.32				.95							1.12			.08			1.40	.50		2.35				.75	8.12
Laurel	Leaf	T.	.40	.01		.10	.20	T.	.35	T.	T.	T.	.85						.05	.74	.01			T.	T.	2.15	.08	.70	1.70				.80	7.94
Leakesville	Chic'sawhay					.40		.10	.35											1.38						.86			1.25				.29	4.63
Louisville	Pearl		.33				.10	.85	.23				1.36							1.45			.16		.50	.28		.55	1.60				.29	7.70
McNeill	do		.04			T.	1.42	.03	.14	T.		.02	1.05							1.10	T.				.20	1.49		.75	1.54				.07	7.85
Macon ‖	Tombigbee			.77			.08	T.	.18			.02	1.18	T.						.91	T.	T.	.17			.50	.20		2.48				.31	6.80
Magnolia	Pearl		.05			T.	.30	.49			T.	.15	.95				T.	.01	1.24					63	1.02		1.35	.30			T.	54	7.03
Meridian	Chic'sawhay		.41			.01	.37	1.17			T.	.57	.06					.78	.16		.57			40	1.51	T.	1.97	.06				.85	8.89
Merrill ‖	Pascagoula	.02		.20			.30	.10	.10		.03		.58						.29	.24	T.				.10	.70	.25	1.00	.10			.28	4.29
Monticello	Pearl	T.	.45	T.	T.	T.	.05	.10	.60	.01	T.	.21	1.85					T.	.02	1.17				.01	3.64	.07	1.00	.88	.73			.85	11.64
Okolona ‖	Tombigbee			.70			.05	1.65	.65				.45							1.47				.55		.10	.65	.70	1.40				.45	8.82
Pascagoula	Coast					*	*	*	*	*	*	*	.77						.03	.37						.38	.16		1.15				.30	3.16
Pearlington	Pearl		T.			T.	1.03	T.	.31		T.		.62							1.10	T.			T.	.11	.66	.02	.43	.75				.34	5.37
Porterville	Tombigbee		.32				.39		.22				.90							1.22			.16		1.10	.60		2.02				.30	7.23
Shubuta ‖	Chic'sawhay	.02	.04	.23			.40	.41	.23				.66							.60		.02				1.52	.61		1.98				.82	7.54
Tupelo	Tombigbee		.90	.03		.06	.47	.27	.41			.04	.03	.68					1.06	.57	.01		.55		.40	1.31	.02		1.34				.64	8.79
Waynesboro ‖	Chic'sawhay			.43			.58	.15	.42				1.25							.83	T.					2.80	.78		2.05	T.			.70	9.99
Woodland	Tombigbee		.65				3.30		.45			.10							1.20			.55			.35	.90			1.67			.60		9.77

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 2, South Atlantic and East Gulf States.*

Date.	Virginia.										North Carolina.															
	Callaville.		Hot Springs.		Lynchburg.		Norfolk.		Richmond.		Charlotte.		Edenton.		Fayetteville.		Hatteras.		Newbern.§§		Raleigh.		Reidsville.		Salisbury.		Wilmington.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	60	34	47	26	61	34	54	44	56	36	59	31	58	42	61	40	55	47	71	38	58	38	60	33	61	30	62	44
2....	60	23	49	25	54	27	61	43	56	28	56	34	62	30	60	31	66	46	64	29	59	35	58	29	56	29	64	38
3....	63	32	45	18	52	30	64	35	62	32	57	31	62	44	65	36	67	40	58	46	62	33	57	30	58	28	65	37
4....	51	29	41	20	51	30	51	33	52	31	54	28	52	33	57	29	56	38	68	26	53	30	53	27	52	27	56	32
5....	67	43	53	32	58	34	66	47	60	38	65	43	69	43	73	44	68	48	76	34	69	44	66	39	64	38	71	50
6....	69	41	61	44	63	43	69	54	66	40	70	56	72	47	74	54	68	56	68	41	71	52	69	51	72	42	74	58
7....	75	57	61	51	73	52	74	61	74	59	69	60	72	57	73	63	69	60	74	52	71	64	72	57	72	42	73	64
8....	75	60	62	38	70	36	77	40	75	37	71	37	78	57	74	64	68	48	75	60	73	40	71	38	75	52	74	51
9....	60	27	43	16	38	25	40	31	38	28	40	30	72	31	64	34	50	42	48	29	40	31	42	27	70	48	51	36
10....	48	29	39	15	44	20	53	36	50	29	41	29	53	34	48	33	60	50	78	28	47	30	42	27	63	37	50	38
11....	63	44	64	35	63	41	66	48	62	45	55	39	62	50	64	45	67	59	78	34	61	45	55	39	55	25	67	47
12....	65	48	57	33	60	37	70	40	64	36	59	40	68	40	68	55	68	48	56	37	65	42	59	40	60	46	75	52
13....	49	30	35	18	38	28	40	34	36	30	40	32	49	33	55	38	50	47	58	29	43	34	41	30	52	41	52	42
14....	47	26	44	19	47	24	43	35	43	28	50	27	57	32	52	32	50	43	59	30	49	31	51	27	47	33	53	37
15....	57	20	50	18	54	23	58	38	56	25	52	28	70	49	57	30	56	47	58	28	56	30	55	25	54	24	60	35
16....	68	37	60	29	65	35	67	51	66	42	65	43	70	41	71	45	69	52	76	36	68	47	66	36	63	33	69	47
17....	70	49	61	35	67	45	70	52	69	48	64	50	71	57	73	56	71	58	79	48	68	54	63	48	67	42	71	58
18....	65	55	61	45	65	53	66	58	62	51	60	48	65	41	68	59	68	58	73	45	64	54	60	52	65	42	71	58
19....	60	31	55	24	58	32	58	43	56	37	65	40	67	44	67	39	59	52	70	39	61	43	65	39	63	48	61	49
20....	69	34	59	31	58	33	69	44	66	35	64	45	72	37	67	42	68	55	72	39	68	42	65	37	67	33	72	48
21....	65	35	39	32	60	36	65	39	65	34	61	47	63	42	64	45	67	48	66	51	64	38	61	45	61	42	70	47
22....	51	29	45	22	50	32	46	39	46	29	53	40	55	36	55	40	57	48	62	35	53	38	54	36	54	37	57	45
23....	59	48	44	37	47	36	68	40	54	36	50	44	67	37	66	46	67	55	71	39	60	44	48	39	63	39	71	48
24....	63	48	57	46	58	47	63	53	61	51	62	49	66	56	70	56	70	63	77	55	65	54	58	53	58	46	76	62
25....	59	44	56	42	56	46	59	46	51	43	66	54	63	50	67	59	68	53	63	56	60	47	58	49	60	54	73	59
26....	60	29	53	32	59	37	61	44	61	31	62	45	63	45	61	47	62	52	68	43	53	45	62	32	62	44	60	53
27....	50	42	52	32	47	36	53	41	48	36	54	42	58	45	69	45	69	46	74	42	50	39	45	40	55	40	70	46
28....	45	30	37	16	45	28	41	36	44	30	48	34	56	36	50	39	47	42	49	33	45	34	49	29	50	32	48	38
29....	50	25	40	22	40	32	50	35	43	30	53	38	53	27	58	32	54	40	61	22	54	32	52	33	56	35	58	35
30....	62	28	56	23	61	28	60	39	62	29	58	36	60	35	64	33	61	48	66	29	61	36	61	32	60	32	62	42
31....	68	37	54	31	59	39	68	47	67	42	64	42	68	45	69	42	68	50	72	37	66	45	66	41	58	40	67	48
Mns..	60.4	36.9	51.5	29.3	55.5	34.9	59.7	42.8	57.1	36.3	57.6	40.1	63.6	41.8	64.0	43.6	62.7	49.7	67.4	38.4	59.3	41.0	57.5	37.4	60.4	38.1	64.6	46.6

Date.	South Carolina.																Georgia.											
	Charleston.		Columbia.		Conway.§§		Ferguson.§§		Georgetown.		Greenville.§§		Newberry.		Society Hill.		Albany.§§		Atlanta.		Augusta.		Dahlonega.		Macon.		Rome.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	58	48	59	42	64	43	75	46	65	52	55	28	55	34	58	39	64	45	56	38	60	40	54	30	58	36	57	32
2....	65	47	59	34	65	35	60	42	63	50	57	28	57	29	63	49	54	42	54	38	58	34	51	31	61	35	60	32
3....	65	40	62	38	49	46	64	45	58	48	37	34	59	39	48	30	45	37	45	29	61	36	48	26	58	36	41	32
4....	58	37	59	32	69	31	56	38	55	46	59	24	59	30	68	40	69	33	61	34	61	34	55	25	64	32	63	26
5....	63	50	70	48	75	35	64	40	68	52	65	30	70	44	73	48	74	39	64	48	70	46	59	48	69	48	68	27
6....	66	58	74	56	.....	40	59	42	76	56	64	48	75	55	75	60	82	54	69	54	76	58	63	51	75	55	71	41
7....	74	58	75	64	.....	.....	63	43	78	62	64	51	71	59	72	65	74	69	66	58	76	65	62	57	71	60	73	56
8....	73	56	73	46	78	.....	67	45	82	66	65	52	71	55	76	38	70	66	65	30	73	46	63	35	69	36	51	51
9....	56	42	46	37	49	39	70	42	46	41	44	27	64	33	48	38	57	38	42	30	46	40	42	27	48	35	47	27
10....	54	41	45	37	56	40	69	50	52	39	45	30	41	36	49	43	56	41	40	35	46	38	41	32	49	41	44	27
11....	68	51	62	42	78	44	53	46	78	48	55	34	54	39	64	52	71	48	59	40	63	45	53	41	63	46	65	37
12....	71	59	63	48	68	46	69	40	76	48	62	42	61	53	67	40	63	56	62	34	61	50	58	40	63	42	48	43
13....	59	46	48	36	52	44	54	44	62	48	47	36	56	37	44	31	58	42	46	36	50	39	43	36	47	38	53	32
14....	56	38	55	30	62	32	60	42	56	35	53	25	54	27	53	31	59	38	53	33	56	31	51	25	55	32	56	28
15....	60	41	56	33	71	33	59	45	60	39	55	26	53	36	60	40	63	41	56	34	57	37	52	31	56	36	58	27
16....	66	55	70	42	75	47	62	43	74	49	66	34	69	34	71	44	68	44	64	42	70	40	62	38	70	37	68	27
17....	73	56	71	57	75	53	75	47	80	58	65	36	68	56	73	57	73	47	66	49	72	57	63	46	70	51	68	38
18....	74	58	65	55	73	55	73	42	76	58	62	52	61	53	69	45	79	53	61	54	66	54	60	51	65	52	66	46
19....	64	55	68	45	72	54	75	45	65	58	65	34	58	37	66	43	70	56	66	49	71	45	64	37	71	46	69	43
20....	68	54	73	49	75	45	74	50	72	58	59	40	71	45	67	53	77	55	62	52	71	53	58	52	71	54	66	48
21....	77	58	69	55	78	53	70	50	80	54	63	50	67	58	70	40	79	57	62	42	75	59	57	50	74	52	50	45
22....	58	52	58	46	.....	47	70	45	67	49	57	45	62	40	55	45	80	52	60	40	61	53	55	37	68	48	58	38
23....	75	55	66	51	79	.....	78	42	78	54	52	46	55	50	66	50	80	63	63	48	70	54	51	46	72	56	59	38
24....	74	63	74	62	82	62	80	50	80	54	60	46	65	52	73	59	76	67	64	57	75	62	60	50	74	61	62	52
25....	77	63	70	61	74	61	75	43	78	60	68	51	69	39	71	50	78	58	64	46	71	60	63	53	70	56	63	55
26....	65	60	65	50	72	60	70	46	69	60	60	37	67	48	67	50	72	56	63	39	66	48	60	30	65	47	54	37
27....	70	53	70	46	76	50	72	43	74	59	50	40	68	46	70	40	71	60	60	36	70	46	57	42	67	44	50	40
28....	55	42	53	40	57	41	77	30	67	40	52	32	53	40	62	37	56	40	48	30	53	44	48	27	54	38	52	29
29....	60	45	58	42	64	33	78	38	63	36	53	33	56	36	58	44	57	35	51	36	58	43	47	28	58	39	54	29
30....	66	46	62	35	69	32	72	32	70	37	58	30	62	32	63	41	68	35	57	43	63	34	56	27	62	33	62	30
31....	70	53	68	47	77	40	.....	46	66	36	52	31	66	40	70	36	67	44	52	33	66	44	51	40	60	39	52	30
Mns..	65.7	51.0	63.4	45.4	69.1[a]	44.3[a]	68.1[a]	43.3	68.8	50.0	57.1	37.2	61.8	42.3	64.2	44.5	68.0	48.7	58.1	40.9	64.3	46.3	55.1	38.4	63.8	43.9	58.5	36.9

TABLE 3—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 2*—Continued.

Date.	Georgia.								Florida.																	
	Savannah.		Thomasville.		Waycross.§§		West Point.§§		Avon Park.		De Funiak Springs.		Fort Myers.		Jacksonville.		Key West.		Miami.		Ocala.		Orlando.		Pensacola		Tallahassee.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	63	48	62	44	67	48	57	36	76	67	.....	.....	78	67	60	54	81	72	82	65	69	59	72	63	60	44	61	44
2....	62	48	61	44	65	47	57	31	83	64	66	48	82	68	67	54	80	74	80	74	76	58	78	60	64	46	62	46
3....	63	43	57	39	50	44	48	31	76	53	68	37	75	56	65	47	75	61	74	51	67	45	74	52	57	39	53	40
4....	62	39	68	35	67	33	66	28	69	42	69	36	69	45	66	43	71	60	70	47	69	41	67	41	64	53	65	41
5....	67	52	73	48	74	41	67	37	73	50	73	59	79	52	69	50	78	70	78	70	78	44	76	46	65	61	71	50
6....	73	62	81	57	82	50	75	55	83	63	.....	.....	83	64	78	62	78	71	79	73	85	57	80	60	68	62	76	37
7....	77	60	73	62	77	57	68	54	83	64	69	39	85	65	80	65	79	74	80	74	84	59	82	62	69	62	73	58
8....	78	53	73	48	77	63	58	57	82	64	62	40	84	66	78	64	80	73	81	72	82	65	80	66	65	41	74	64
9....	53	45	59	41	61	43	49	32	83	62	56	40	85	65	64	51	80	71	81	74	68	56	76	63	59	38	58	42
10....	56	42	60	49	57	45	50	35	79	63	68	42	81	65	57	52	80	72	79	73	71	55	76	61	61	53	62	45
11....	69	50	74	54	63	46	65	40	82	61	66	48	82	62	76	55	79	73	79	73	81	59	80	63	67	59	71	51
12....	70	57	65	51	73	56	55	50	84	59	72	49	81	63	76	59	80	73	82	67	80	60	81	60	65	48	64	58
13....	57	48	62	46	65	49	53	34	81	60	64	43	81	61	70	53	79	72	80	73	78	55	79	59	53	43	63	47
14....	57	39	60	41	67	40	57	30	74	62	60	40	73	66	59	48	77	72	77	73	66	51	72	60	64	44	59	43
15....	63	44	65	43	70	40	62	31	76	59	62	40	78	64	63	53	80	71	73	67	78	50	75	55	62	49	64	42
16....	70	54	74	49	75	48	68	35	78	58	67	42	79	59	72	53	76	68	76	68	78	54	76	56	61	52	72	50
17....	71	57	74	53	75	53	67	41	78	57	.....	.....	79	60	76	59	78	69	77	68	80	56	79	56	69	54	74	54
18....	73	59	69	52	75	63	63	45	83	58	.....	.....	81	63	78	60	78	67	80	66	81	55	78	54	63	58	69	55
19....	68	56	76	55	78	54	72	46	80	59	.....	.....	82	63	74	60	81	71	80	64	79	56	79	63	68	57	76	56
20....	76	56	77	59	80	54	71	48	82	60	.....	.....	82	62	79	57	80	72	79	72	84	57	81	59	71	60	75	60
21....	76	60	74	60	78	56	63	55	84	60	65	48	82	63	80	62	80	73	80	71	83	58	81	59	72	55	72	60
22....	65	55	76	57	79	57	69	44	83	64	.....	.....	82	62	75	62	80	70	79	73	84	57	82	64	66	51	75	59
23....	76	56	77	64	79	59	69	45	82	63	.....	.....	83	65	79	61	82	74	80	72	85	53	81	60	70	63	75	63
24....	76	64	76	62	80	63	73	60	85	63	.....	.....	83	64	79	65	82	72	79	73	82	53	81	61	72	64	72	63
25....	75	65	79	62	77	65	64	60	85	65	.....	.....	80	64	78	67	82	72	80	67	80	65	83	64	69	62	77	64
26....	70	61	70	61	74	61	64	42	83	67	78	52	82	64	77	65	81	72	81	65	85	65	82	63	69	62	70	62
27....	72	51	71	48	74	62	59	46	75	66	64	48	75	64	74	55	82	67	81	68	64	46	76	68	65	41	69	60
28....	53	46	58	39	57	45	53	31	70	54	62	32	66	58	57	47	73	65	69	53	.....	35	71	53	56	36	56	41
29....	61	41	64	36	65	34	57	33	74	40	59	33	67	46	64	43	68	62	66	48	.....	42	65	37	60	44	61	37
30....	66	50	67	36	70	34	61	32	75	46	64	37	73	47	69	47	75	61	74	52	.....	46	72	37	65	48	64	40
31....	71	52	66	47	73	45	55	34	75	55	68	39	75	57	77	53	81	68	78	69	.....	52	76	52	67	44	67	50
Mns..	67.4	52.0	69.1	49.7	71.1	50.2	61.8	41.2	79.2	59.0	65.8[i]	42.5[i]	78.9	61.0	71.5	55.7	78.6	69.7	77.9	66.9	77.7[d]	53.7	77.1	57.3	64.7	51.4	67.7	51.0

Date.	Florida.		Alabama.														Mississippi.									
	Tampa.		Anniston.		Bermuda.		Birmingham.		Eufaula.§§		Mobile.		Montgomery.		Tuscaloosa.§§		Uniontown.		Bay St. Louis.		Columbus.§§		Jackson.		Laurel.		Meridian.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	67	63	60	31	66	31	60	35	54	38	60	42	55	34	60	30	65	31	64	42	62	28	67	32	58	35	59	32
2....	77	63	61	36	69	.....	64	35	57	33	65	46	62	41	64	31	77	35	67	51	66	29	70	44	70	48	67	39
3....	67	53	45	30	49	35	47	29	51	31	61	37	53	34	50	32	70	32	62	37	54	29	64	33	60	32	55	32
4....	69	46	65	32	70	31	66	38	63	29	67	48	68	38	65	30	70	37	66	50	70	29	72	38	70	40	69	38
5....	76	53	66	56	72	55	68	58	65	32	65	56	69	54	70	31	70	43	68	54	70	39	76	61	61	58	71	59
6....	82	63	74	59	76	61	69	60	73	50	69	62	75	58	78	58	75	58	65	59	71	61	74	66	71	63	71	62
7....	83	69	72	64	78	63	74	65	71	53	68	62	77	63	74	62	77	58	67	60	75	63	76	52	75	66	75	50
8....	81	65	68	29	70	42	66	28	64	57	66	40	68	34	51	39	75	38	64	43	40	32	35	29	70	36	50	29
9....	75	64	47	29	52	33	48	26	53	32	54	37	53	32	48	28	50	31	51	36	47	25	44	30	60	30	43	28
10....	77	61	45	39	58	47	50	43	54	35	60	48	53	45	50	30	54	39	61	45	58	29	64	41	61	42	59	43
11....	80	63	66	45	71	55	67	50	67	43	68	58	67	49	70	47	77	45	64	57	70	45	75	62	75	60	74	58
12....	78	64	67	35	69	49	60	33	60	50	64	48	67	39	47	46	60	42	66	54	44	43	70	38	70	45	59	35
13....	81	60	56	33	57	37	56	32	54	34	58	42	56	35	53	30	56	34	60	41	52	27	58	31	63	33	55	31
14....	70	59	57	30	61	34	60	32	56	28	66	41	58	35	60	30	58	35	67	43	60	27	64	32	64	36	58	34
15....	77	57	60	39	68	40	63	41	59	30	64	48	62	40	65	32	67	39	66	47	64	30	72	41	68	38	65	40
16....	76	57	67	46	74	43	67	50	66	34	67	50	71	45	68	41	70	42	67	55	68	39	72	48	75	45	71	43
17..	78	60	70	53	73	44	69	54	67	38	69	53	72	50	69	43	72	43	67	56	69	46	71	62	73	59	72	57
18....	82	60	64	50	64	58	64	54	64	45	63	58	64	57	68	54	71	54	64	59	67	55	74	62	67	58	65	57
19....	78	62	68	49	75	53	69	49	67	48	71	57	72	51	72	55	71	55	66	58	69	51	73	60	63	56	72	57
20....	82	63	68	57	75	53	71	52	72	50	70	58	74	57	72	56	73	53	68	59	73	57	74	60	63	59	74	59
21....	81	63	57	44	66	51	52	40	71	52	68	52	65	48	50	42	71	45	66	56	44	37	66	40	72	45	59	40
22....	81	64	65	40	74	46	65	40	69	46	72	49	69	46	65	40	66	42	63	49	62	37	64	40	69	40	67	40
23....	81	65	68	54	75	56	69	59	73	48	68	62	72	60	70	41	74	55	70	61	66	39	72	59	75	59	72	58
24....	79	66	65	59	77	62	63	60	74	61	74	62	74	61	60	59	72	60	70	62	63	58	70	59	67	60	64	59
25....	78	68	61	42	62	57	61	48	69	53	65	60	64	52	53	45	64	50	65	61	53	46	64	49	63	53	63	46
26....	80	68	64	39	60	51	62	43	65	49	66	56	65	47	63	41	60	49	66	58	52	37	52	44	55	47	54	44
27....	72	60	47	34	66	44	47	32	64	52	64	43	65	37	47	43	60	40	67	50	46	41	55	43	55	44	50	36
28....	61	48	49	27	56	30	50	28	52	31	58	36	52	32	53	29	53	30	60	32	57	27	62	30	59	29	56	31
29....	67	45	53	31	61	31	54	34	55	32	58	41	57	40	55	30	60	36	63	39	59	29	64	34	63	33	58	33
30....	71	50	61	36	69	31	60	42	60	30	65	43	64	40	60	32	60	35	63	47	63	33	67	42	68	38	65	41
31....	74	58	56	31	61	44	56	36	59	34	65	45	58	39	53	35	59	36	65	57	50	41	62	44	62	46	59	38
Mns..	76.2	60.0	61.0	41.3	67.2	45.6[a]	61.2	42.8	62.8	41.2	65.1	49.7	64.5	44.9	60.7	40.1	66.4	42.6	64.8	50.9	60.1	39.0	65.9	45.4	66.0	46.2	62.9	43.5

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 3, OHIO VALLEY.

Prof. FERDINAND J. WALZ, District Editor.

GENERAL SUMMARY.

The weather conditions prevailing during January, 1913, in the Ohio Valley are notable for the unseasonably mild temperature, exceptionally light snowfall, excessive rains, and destructive floods; also the failure of the usual ice harvest. In nearly all sections of the district the temperature averaged the highest, except in 1890 and in some sections 1907, of any January of record for the respective States. At no station in the entire district did the temperature go as low as zero, the lowest recorded at any station being 2° at Hoopeston, Ill., on the 12th. Except on a few dates the minimum temperatures were universally unseasonably high, but the maximum temperatures were well within the records of past years. At only one station, Wytheville, Va., was the maximum record of January for past years broken. In Tennessee and the more southerly portions of the district temperatures were below freezing on comparatively few nights, and on no day did the temperature remain below freezing in those sections during the 24 hours.

Precipitation over the Ohio Valley as a whole was phenomenal and was much above normal in all sections, except the northern portion of western North Carolina and in southwestern Virginia, and was the greatest for any month in several sections. Especially notable was the rainfall for the State of Kentucky and for central and western Tennessee. The average rainfall for the whole State of Kentucky was 11.41 inches, which is three times the normal amount for January and one-fourth the average annual amount for that State. For the sections of Tennessee mentioned similar conditions prevailed. As a result of general and heavy rains over such extensive areas of the watershed, widespread and destructive floods occurred in the Ohio River in practically all its tributaries and in the smaller streams of the various States. The greatest destruction, however, was wrought in the lower Green River Valley of Kentucky and along the lower portions of the Cumberland and Tennessee Rivers in Kentucky and Tennessee.

The month was particularly marked by the absence of the severe winter storms common to the season. Several barometric disturbances of moderate gradient passed over the district, but they were in the main attended by heavy rains and mild temperature and were not succeeded by the usual cold waves. The most notable barometric occurrences were: (1) The low-pressure area which developed in the Gulf section and moved slowly northeastward through the lower Mississippi and Ohio Valleys in the period 4th–7th, attended by general and heavy rains; (2) the low-pressure area which developed over the southern Rocky Mountain slopes on the 10th, moved across the central valleys on the 11th, and reached the Allegheny Mountains and Atlantic Coast States by the morning of the 12th, and which also was attended by general and heavy rains; (3) the barometric disturbance which developed over the eastern Rocky Mountain slopes on the 22d and crossed the central valleys on the 23d, attended by general and moderately heavy rains. The center of this latter disturbance, however, passed to the northward across the Lake region.

The following table summarizes the chief features of meteorological interest for the several sections of the district:

Portions of States included in the Ohio River basin.	Temperature.				Precipitation.						
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest monthly.	Least monthly.	Greatest in 24 hours.	Average number of days.	Average snowfall.
New York	34.2	+10.5	58	6	5.01	+2.02	5.87	4.25	1.08	15	7.1
Pennsylvania	36.8	+ 8.6	64	3	6.59	+3.14	8.19	3.20	1.90	18	8.0
Maryland	36.0	+ 9.3	62	8	5.51	+1.48	5.85	5.14	1.00	16	11.3
West Virginia	40.9	+ 8.4	74	10	6.67	+2.91	10.53	3.47	2.97	15	5.7
Ohio	37.5	+ 8.4	70	4	7.31	+4.38	10.80	4.50	2.54	17	7.8
Indiana	35.9	+ 6.7	66	5	8.56	+5.72	12.20	3.71	3.50	16	4.6
Illinois	35.2	+ 5.1	63	2	8.22	+4.98	12.66	4.93	3.15	14	2.1
Kentucky	42.5	+ 7.3	76	13	11.41	+7.70	14.81	5.01	5.80	14	1.4
Tennessee	46.4	+ 7.8	75	7	9.36	+5.90	16.62	3.40	5.48	14	1.2
Alabama	46.6	+ 5.5	78	19	8.15	+3.73	11.12	6.55	2.60	12	T.
Georgia	46.3	+ 6.8	69	22	7.31	+2.05	.....	.....	1.80	12	3.0
North Carolina	43.3	+ 7.1	73	13	4.60	+0.09	7.88	2.81	1.80	11	1.2
Virginia	41.8	+ 8.5	72	11	4.34	+0.83	8.59	1.88	1.80	10	1.8

TEMPERATURE.

The unseasonably high temperature which set in about the close of December continued through nearly the whole of January, there being but a day or two at rare intervals when the temperature was not above normal. The warmest period was the 15th–20th, when the mean daily temperatures generally ranged from 10° to 25° in excess of normal, although there were quite a few other days scattered through the month when the excess was equally large; furthermore, on the 7th in the southeastern portion of the district the excess was even greater, being as much as 29° above normal at several stations. For the entire month the average temperature of the several sections of the district was in excess of the normal in amounts ranging between 5.1° and 10.5°. Maximum temperatures were generally well within the extremes of past years, but minimum temperatures, as a rule, were unusually high, and at no station was a temperature as low as zero reached.

PRECIPITATION.

Precipitation was remarkably heavy over practically the entire watershed of the Ohio River. The monthly amounts have never been equaled in January over the major portion of the valley, nor in any month of past years over a large part of it. Over the southern portion of Indiana, extreme southern Illinois, nearly the whole

of Kentucky, and over central and western Tennessee the fall for the month ranged from 10 to over 16 inches, while from 6 to 10 inches fell over the remainder of the district, except over a narrow area extending from the upper Cheat River section of West Virginia southward to the Asheville section of North Carolina, where there were from 2 to 4 inches, and in the extreme northeastern corner where there were from 3 to 6 inches.

Precipitation, especially rain, was remarkably frequent during the month, occurring almost daily. The periods freest from precipitation were the 9th–10th—except that there was more or less general rain in Ohio and Indiana—the 13th–15th and the 25th, 26th, and 30th. On the 27th there was no precipitation of consequence over States north of the Ohio River, but rains were general and quite heavy over the southern and eastern parts of the district, including Tennessee and West Virginia.

Snow fell quite generally on the 3d and 4th, ranging in amount from a trace to 6 inches, and over the more northerly and easterly portions of the district on the 21st, 28th, and 29th. Except on these dates the snowfall was exceedingly light and scattering. The total amount for the month was of little importance in any section of the district and that remaining on the ground for any length of time was small.

The greater portion of the precipitation occurred in the periods 6th–8th and 11th–12th, when from 5 to 10 inches fell over large areas of the district and 24-hour amounts ranging from 2 to 6 inches were of common occurrence.

At Marietta, Ohio, where there is a precipitation record of 93 years, the January amounts have exceeded this month's only twice, namely, in 1882 and 1907. At Portsmouth, Ohio, with an 82-year record, the amount for this month has been exceeded only once, namely, in 1898, while for the State of Ohio as a whole the precipitation for January, 1913, is the sixth greatest for any month in a period of 50 years. For the States of Kentucky and Tennessee the precipitation record for January, 1913, is not equaled by any month in the climatic annals of those States.

MISCELLANEOUS.

Thunderstorms were unusually frequent for January. They occurred on the 1st in northern Alabama, the 5th in Illinois and Kentucky, the 6th in Ohio, Indiana, Illinois, Kentucky, and Tennessee, the 7th in Illinois, Kentucky, and Tennessee, the 11th and 12th in West Virginia, Kentucky, and Tennessee, the 12th and 13th in Alabama, the 16th in Kentucky, the 17th and 18th in Ohio, the 18th in Pennsylvania, West Virginia, and Tennessee, the 20th in Pennsylvania, Kentucky and Illinois, the 21st, 22d, and 23d in Tennessee, the 23d in Ohio, the 30th in Kentucky, and the 30th and 31st in Tennessee.

During the 5th, 6th, and 7th, with rain falling steadily, the temperature in Illinois and parts of Indiana remained near freezing or below, consequently a heavy coating of ice formed on the ground and all exposed objects resulting in extensive damage to trees and electric-service wires. It was pronounced to have been the worst condition of this kind during the past 30 years.

January 18.—Considerable damage to trees and buildings in Allegheny and Westmoreland Counties, Pa., resulted from high winds. In Richland County, Ohio, a barn was struck by lightning and destroyed with all its its contents.

January 20.—A wind squall struck Indianapolis, Ind., at 10.33 a. m., lasting only about 5 minutes, but caused a damage of about $2,000. At Danville, Ill., 2 inches of rain fell in three hours and caused the suspension of street-car traffic. A large barn near Georgetown, Ill., was struck by lightning and destroyed; also, in that vicinity two horses were killed by lightning.

JANUARY FLOOD IN THE OHIO VALLEY.

During the first 13 days of January, from 6 to 12 inches of rain fell over the extreme southerly portions of Illinois and Indiana, the southwestern edge of Ohio and over nearly the whole of Kentucky, and the western half of Tennessee, while there were from 4 to 6 inches over considerable of the remainder of the Ohio Basin. Much the greater part of this rain fell in two periods, namely, 6th–8th and 11th–12th. The rains in the lower valley, especially in the Green River section of Kentucky, and the Cumberland and lower Tennessee River Basins of Kentucky and Tennessee take rank among the heaviest rainfalls anywhere in the Ohio Valley in recent years and are comparable only to the rains in the lower Ohio Basin of October 3–6, 1910. (See Monthly Weather Review, District No. 3, October, 1910.)

Fortunately the rains were not so heavy over the upper portion of the Ohio Basin and there was comparatively little snow on the ground in any section, also that the ground mostly was soft and unfrozen. The greatest accumulation of snow, and the only section where it was of any importance, was over the watershed of the Allegheny River, and this river did not reach flood stage except in the lower portion.

The following account of the flood, extracted from the reports of United States Weather Bureau section directors and officials in charge of river districts in the Ohio Valley, gives somewhat in detail its extent and the amount of damage suffered:

Pittsburgh, Pa., district.—There were two distinct floods in the Pittsburgh district: The first on the 8th–9th, when a flood crest of 31.3 feet, or 9.3 feet above flood stage, was reached at 7 a. m., of the 9th, resulted from moderately heavy rains together with the melting of a snow cover of from 1 to 5 inches. The second occurred on the 12th–13th, when a crest of 26.3 feet was reached at Pittsburgh at 1 a. m., of the 13th. Timely warnings of both floods were issued by the local office of the Weather Bureau at Pittsburgh and practically all property that could be moved was placed beyond the reach of damage. The losses sustained were therefore confined more largely to heavy machinery and such stock as it was impractical to move and to the enforced suspension of business. There was also considerable damage to farm lands by erosion. The estimated total amount of damage of all kinds is $750,000; also one life was lost at McKees Rock, Pa. The estimated value of property saved by the warnings is about $2,000,000. A large bridge in course of construction across the Allegheny River at Pittsburgh was undoubtedly saved by the warnings. As soon as warnings were received a large force of men was put to work to reenforce the structure, enabling it to withstand the washing away of the false work, which occurred on the morning of the 9th.—GEORGE H. BLISS, Section Director, Philadelphia, Pa., and HENRY PENNYWITT, Local Forecaster, Pittsburgh, Pa.

Parkersburg, W. Va., district.—The Ohio River was above flood stage at Wheeling January 9–14, crest 44.2 feet on the 10th; at Parkersburg January 9–16, crest 45.1 feet on the 13th; and at Point Pleasant January 9–16, crest 50.4 feet at 2 p. m. the 13th. Timely warnings were issued from the local office of the Weather Bureau at Parkersburg, and the loss is estimated to be only about $20,000, most of which was to property that could not be moved.—H. C. HOWE, Section Director, Parkersburg, W. Va.

Cincinnati, Ohio, district.—The Ohio was above flood stage at Catlettsburg January 10–17, crest 56 feet on the 14th; at Portsmouth January 11–18, crest 58.2 feet the 14th; at Maysville January 12–18, crest 57.3 feet the 14th, and at Cincinnati January 11–20, crest 62.2 feet in the early morning of the 15th. Timely warnings, forecasts of expected stages and the time and height of flood crest, and general information regarding the flood were issued from the local office of the Weather Bureau at Cincinnati, which resulted in the saving of property esti-

mated at value of $1,600,000. The estimated value of property damage in the district is about $106,000, and the money value of losses occasioned by enforced suspension of business, loss of wages, and cost of removing and protecting property, is estimated at $400,000. The damage to crops and farm lands was slight.—W. C. DEVEREAUX, Local Forecaster, Cincinnati, Ohio.

Columbus, Ohio, district.—High water prevailed in all streams of Ohio during most of the time from the 8th to the 26th. In the Scioto watershed flood stages occurred at Delaware on the 8th, 11th, 17th, and 18th, and at Chillicothe on the 13th, 14th, 19th, 20th, and 25th. The Muskingum was above flood at Coshocton from the 8th to the 15th and from the 18th to the 26th. The Great and Little Miami Rivers were high on several dates, particularly on the 8th and 12th, but at no time was a flood stage reached. While some damage was reported from the southern hill counties, it is not believed to have been very great. At Columbus on the 8th a groceryman with his horse and wagon was swept down the stream and lost. At Mineral City, in the Muskingum watershed four young men accidentally drove their team into the river. Their horses were drowned, and the men escaped with great difficulty. At Kenton, near the head of the Scioto, and Massillon, near the head of the Muskingum, the high water flooded parts of the towns and drove a number of families out of their homes. But the loss by floods was not serious except along the Ohio River.—J. WARREN SMITH, Professor of Meteorology, Columbus, Ohio.

Indianapolis, Ind., district.—The floods in the Wabash and White Rivers were confined to the lower reaches; in the upper reaches there was only a slight overflowing. The crest of the principal flood on the Wabash passed Logansport on the 21st, Attica on the 23d, Terre Haute on the 25th, and Mount Carmel on the 30th. On the West Fork of the White it passed Indianapolis on the 22d, and Elliston on the 25th. On the East Fork of the White it passed Shoals on the 25th. Frequent and heavy rains caused the floods to continue longer and the crest to move more slowly than in the majority of floods in these rivers. While the bottom lands were overflowed in many places, the damage resulting was much less than it would have been at other seasons of the year and was practically confined to the district along the White River from the junction of the East and West Forks to its mouth, and the lower course of the West Fork of the White River.—V. H. CHURCH, Section Director, Indianapolis, Ind.

Cairo, Ill., district.—At the close of January, floods were in progress over the entire immediate Ohio Valley comprised in this district, over the Wabash section in the vicinity of Mount Carmel, Ill., and over the Tennessee River Valley in the vicinity of Riverton, Ala. Reports as to the extent and damage of these floods will be made after they subside.—R. T. LINDLEY, Local Forecaster, Cairo, Ill.

Springfield, Ill., district.—Floods in the Wabash and Ohio Valleys during the last two decades of January caused much damage, an estimate of which is at present impossible. The rivers at Mount Carmel and Shawneetown passed the flood stage about the middle of the month and continued above into February. At the close of January the Wabash River in the vicinity of Mount Carmel was from 7 to 15 miles wide. The warnings of the Weather Bureau saved much property, but thousands of bushels of corn and many head of cattle were lost, and residents of the lowlands were rendered temporarily homeless. Railroads and highways were impassable and business was at a standstill. From the confluence of the Little Wabash and the Wabash proper, the main current of the latter was diverted from its usual channel, taking a southwesterly course and flowing into Saline River a short distance below Equality, Ill. In former years the diversion has occurred only when the water reached a stage of 52 feet on the Shawneetown river gage, but this time the current broke through when the stage reached 49 feet on that gauge.—C. J. ROOT, section director, Springfield, Ill.

Nashville, Tenn., district.—Moderately low stages prevailed on the Cumberland River until the 6th, when heavy rains started a rapid rise and flood stages were passed in 48 to 60 hours. At Burnside the river was above flood stage on the 8th and 9th, reaching a crest of 61.5 feet at 6 a. m. on the 8th, the highest since March 30, 1912. At Celina it it was above flood stage the 9th to 13th, reaching a crest of 50.1 feet at 7 a. m., on the 12th, which is the highest at that station since records began December, 1903. At Carthage the river was above flood stage from the 9th to the 16th, inclusive, reaching a crest of 48.8 feet at 1.30 p. m., of the 13th. At Nashville flood stages obtained from the 8th to the 19th, inclusive, a crest of 48.4 feet being reached at 2.20 p. m., on the 13th, which is the highest since March, 1897. This stage, however, has been exceeded at Nashville seven times in the past 41 years. At Clarksville flood stages obtained from the 8th to the 22d, a crest of 56 feet being reached at 9 a. m., on the 9th which is the highest since records began in 1901 and 2.4 feet higher than in April, 1912, but considerably lower than the reputed high-water mark, 60.6 feet, January, 1882. The river was above flood stage at Clarksville again from the 28th to the 31st, inclusive, but the crest of the wave was only 44 feet. The effect of local tributaries and rainfall distribution is shown in the fact that the crest of the flood was reached at Clarksville so many days in advance of the crest at Nashville, 50 miles or more above. Rainfall usually comes to the lower watershed first. An interesting incident occurred when a train on the Louisville & Nashville Railroad near Cumberland City collided with a steamboat navigating the swollen Cumberland River. The collision occurred at night. The boat was somewhat damaged.—ROSCOE NUNN, Section Director, Nashville, Tenn.

Louisville, Ky., district.—The remarkably heavy rains during the first 13 days of the month and especially in the periods 6th–8th and 11th–12th, when 24-hour amounts ranging from 1.5 to nearly 6 inches were common in one or the other or both of these periods in practically all parts of Kentucky, except the east-central portion, caused destructive floods in the rivers and streams, large and small, in nearly all sections of the State. Lowlands were flooded, forming vast inland seas, highlands and slopes were eroded, bridges and fences swept away, and homes, barns, and houses of various kinds were inundated by the thousands. Planted and stored crops were swept away or damaged, highways washed, trains and mail service suspended or impeded, and business partially suspended in nearly all sections and wholly stopped in some, as in much of the Green River Valley, where in a number of localities entire communities became flood refugees. There was much distress and suffering from exposure and hunger, and a wide call for relief for the destitute.

KENTUCKY RIVER.

The Kentucky River was above flood stage, 30 feet, at Beattyville on only one day, the 8th, and no damage of consequence was done by the river at that point or above. In fact, the high water was beneficial in the upper reaches of the Kentucky and other mountain streams on account of causing a good logging tide, thus enabling timber men to get saw logs to market and the numerous sawmills which had been idle a long time to resume operations and give employment to many men. At High Bridge the Kentucky River was above flood stage (27 feet) during three days, 8th to 10th, inclusive, and at Frankfort (31 feet) during five days, 9th to 13th, inclusive. From both places have come reports of great damage from landslides along the steep banks of the river, these landslides being more extensive than ever before known in those sections. The waterworks pumps at Frankfort were put out of commission by the high water and there was much inconvenience and some suffering on account of the water famine in that city.

In the entire Kentucky River drainage area as far up as Beattyville business interests, including transportation, mail, telegraph, and telephone services, were badly demoralized on account of high water in streams of all sizes. Country travel where streams had to be crossed was dangerous if not impossible, as creeks could not be forded and many bridges were carried away or else made unsafe. Many hundreds of houses along the river banks and larger streams and in the lowlands were inundated and had to be temporarily vacated. All train service was late, and some of the railroads had to abandon schedules for a day or two. Flood warnings were issued to the river observer at Frankfort, Ky., beginning the morning of the 8th, and from there disseminated by telephone and through the newspapers; also through the Louisville papers which circulate largely in all parts of the State.

OHIO RIVER.

At Madison, Ind., the Ohio River was above flood stage (46 feet) from the afternoon of the 11th to the early morning of the 21st, the crest of the flood, 55.4 feet, being reached on the 14th. No serious damage was reported from Madison and vicinity, the major loss being the expense of moving property and household goods from the flooded zone, regular and timely warnings being issued from the Louisville office. At Louisville the Ohio River was above flood stage from about noon of the 11th to about noon of the 22d, reaching a crest of 39.5 feet at 3 p. m., of the 14th. The damage at Louisville from suspension of business in the submerged sections, the interference with transportation service, suburban electric service, train and rural mail service, the inundation of homes, business houses, factories, lumber and coal yards, the damage to dredging machinery and implements buried under water and mud in the cut along the Louisville and Portland Canal, which were being used in the extensive work of the enlargement of that canal, and the cost of moving household goods, merchandise, and other property was large, probably amounting to about $200,000. Shippingport, a small section of the city lying between the Louisville and Portland Canal and the Ohio River, was submerged by noon of the 12th, but 78 families comprising practically the entire residential section, had been moved out of their homes by the police and fire departments on the 11th, after due warning had been given by the Weather Bureau. During the 12th special warning was given to the city officials that the water would sweep over the "cut-off" in the northeastern part of the city, and flood that entire section, and the families were hurriedly removed from their homes during that day and night. By 6 a. m., of the 13th, with a stage of 37.6 feet, the water began to go over the "cut-off" and at 10 a. m., when the stage had reached 38 feet it was pouring over in a stream 50 feet wide. The flood gates were then opened and the entire section was inundated,

1,700 families being rendered homeless in that section of the city. Many men were thrown out of employment by suspension of business, and there was great suffering and destitution.

The damage and loss by the floods in the Kentucky River Valley and the Ohio River section from Madison to 50 miles below Louisville is estimated to be about $450,000. The money value of property saved by the Weather Bureau warnings and flood information is approximately $1,000,000.

GREEN RIVER.

The greatest loss and suffering in Kentucky from the January, 1913, floods were experienced in the lower Green River Valley, particularly in the lowlands of McLean, Webster, and Hopkins Counties. In that section there were many instances where crops, the work of the year, were swept away, live stock drowned, houses inundated and whole communities forced to flee for their lives. At Calhoun, the county seat of McLean County, and which is located near the center of the most devastated region, between 2,000 and 3,000 persons were rendered homeless and largely destitute by the flood. The courthouse was turned over to the occupancy of refugees from their homes. The cooperative observer at Calhoun reports that the water was the highest since 1883. The river was swollen to a width of 5 miles, islands dotting here and there where an occasional hill rose above the water and on which the people of the lowlands with their stock had collected. Rumsey, across the river from Calhoun, with a population of about 200, was all under water. The stage of water at Green River Lock No. 2, located at Rumsey, reached a crest of 35.5 feet and remained above 35 feet for 7 days. On a knoll about 3 miles from Calhoun, 40 persons were marooned in a house situated on a hill. They had been driven to the knoll from the lowlands and during the night the water rose to such an extent as to cut off escape. They had been there two days when discovered. A schoolhouse in McLean County sheltered 50 refugees. At Ashbyburg, in Hopkins County, a village situated on a hill a short distance below the confluence of the Pond and Green Rivers, and which had been made an island by the flood, surrounded by from 2 to 5 miles of water, there were nearly 1,000 people marooned. Most of these were refugees from the lowlands of McLean, Webster, and Hopkins Counties and had brought with them their flocks and herds. Food and forage had become exhausted when relief came. Conditions in the lower Green River Valley, except as to extent of flooded territory, were fully as bad as those at Hickman during the Mississippi River flood of last year. Great damage was also done by the Barren, Rough, and other tributaries of the lower Green River.

There was considerable damage also in the upper reaches of Green River, at least as far up as Greensburg where the water reached the highest mark ever known. Greensburg was entirely surrounded for several days. Entrance and exit from the town became impossible. Streets leading to the railroad station were under 15 feet of water. Two large steel bridges, one located at Berrys Ferry and the other at Wells Ferry, both of which were built above supposed high-water mark, were submerged to a depth of 5 feet or more. Lowlands in many localities in this section were swept clear of houses, haystacks, and fodder, besides there was great loss in stock of all kinds, horses, colts, mules, cattle, and hogs. Moreover, thousands of dollars worth of damage was done along the tributaries of the upper Green River.—F. J. WALZ, Professor of Meteorology, Louisville, Ky.

TABLE 1.—*Climatological data for January, 1913. District No. 3, Ohio Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New York.																				
Allegany	Cattaraugus	1,441	7	35.0	.....	58	8	6	9	40	5.87	.....	1.08	6.2	17	6	4	21	sw.	Charles E. Whitney.
Bolivar	Allegany	1,800	19	33.5	+10.5	53	17†	7	9	38	4.90	+ 2.02	0.80	5.5	16	8	6	17	sw.	Charles F. Hoffman.
Olean	Cattaragus	1,402	5	.....	.....	.....	.....	.....	.....	.....	4.25	.....	1.08	9.5	13	.....	.....	.....	w.	John W. Alles.
Pennsylvania.																				
Aleppo	Green	1,135	12	39.0	+ 8.6	63	20†	15	22	41	7.59	+ 4.05	1.36	6.0	15	8	3	20	.....	J. S. Hinerman.
Baldwin	Butler	1,404	7	36.0[e]	.....	55	8†	13[e]	13	38[e]	7.64	.....	1.13	9.0	20	3	5	23	w.	S. H. Templeton.
Beaver Dam	Beaver	674	19	.....	.....	.....	.....	.....	.....	.....	5.78	+ 3.09	1.15	.....	21	5	4	22	sw.	U. S. Engineer.
Brookville	Jefferson	1,173	22	36.9	.....	60	21	9	5	37	3.20	+ 0.20	0.50	2.5	20	.....	.....	.....	w.	H. C. Bartholomew.
Clarion	Clarion	1,078	28	.....	.....	.....	.....	.....	.....	.....	6.70	+ 2.92	1.30	9.5	17	10	0	21	w.	J. A. Miller.
Claysville	Washington	1,127	9	39.6	.....	64	21	17	13	42	6.35	.....	1.00	5.0	17	8	7	16	w.	E. T. Buchanan.
Confluence	Somerset	1,352	29	.....	.....	.....	.....	.....	.....	.....	6.26	+ 2.27	1.25	.....	18	9	6	16	.....	Grant Pyle.
Franklin	Venango	935	39	34.6	+ 7.9	59	20	14	5†	37	7.63	+ 3.88	1.38	7.8	20	9	2	20	sw.	F. E. Dixon.
Freeport	Armstrong	772	40	.....	.....	.....	.....	.....	.....	.....	7.79	+ 4.00	1.00	4.1	19	6	2	23	.....	Mrs. Anna R. Burtner.
Greensboro	Green	768	24	.....	.....	.....	.....	.....	.....	.....	7.42	+ 3.73	1.60	5.2	20	9	2	20	sw.	James G. Cramer.
Greenville	Mercer	950	17	34.4	+ 7.4	58	20	6	5	32	6.93	+ 3.36	1.27	12.0	17	9	1	21	nw.	A. M. Orr.
Indiana	Indiana	1,350	16	37.6	+ 9.0	60	21	14	13	37	6.42	+ 2.79	1.08	10.5	18	6	7	18	s.	R. W. Wehrle.
Johnstown	Cambria	1,184	25	38.3	+ 8.5	61	20	17	13	35	8.19	+ 4.06	1.90	9.4	25	8	5	18	se.	E. C. Lorentz.
Lock No. 4	Washington	718	27	.....	.....	.....	.....	.....	.....	.....	5.83	+ 2.77	1.10	7.0	15	1	5	25	sw.	R. T. McGowan.
Lycippus	Westmoreland	1,420	21	38.9	+ 9.6	62	20	11	9†	40	7.89	+ 4.10	1.25	11.1	18	.....	.....	.....	.....	Murray Forbes.
Mosgrove	Armstrong	775	2	.....	.....	.....	.....	.....	.....	.....	6.52	.....	1.13	6.1	19	11	0	20	nw.	C. J. Moore.
Pittsburgh	Allegheny	842	43	40.2	+ 9.5	63	20	19	9	37	5.28	+ 2.41	0.86	9.3	20	7	5	19	sw.	U. S. Weather Bureau.
Saegerstown	Crawford	1,116	22	34.1	+ 8.7	56	21	9	5†	39	7.19	+ 3.85	1.00	9.5	15	....	3	28	sw.	J. G. Apple.
Sharon	Mercer	940	2	36.0	.....	61	21	7	5	44	5.90	.....	1.27	8.9	17	6	2	23	sw.	Norman D. Powell.
Skidmore	Lawrence	1,000	9	34.7	.....	58	20	3	5	41	4.80	.....	1.00	6.0	15	11	1	19	sw.	W. H. Stoner.
Somerset	Somerset	2,250	57	33.0	+ 7.0	58	2	6	22	38	6.38	+ 1.66	1.06	11.3	16	4	10	17	sw.	W. M. Schrock.
Uniontown	Fayette	999	25	39.6	+ 7.4	63	17	14	22	30	7.94	+ 4.37	1.14	6.5	19	1	11	19	sw.	Wm. Hunt.
Warren	Warren	1,137	24	35.5	+ 10.4	60	20	11	14	32	5.91	+ 3.00	0.65	12.3	17	8	0	23	nw.	Anna Simpson.
Maryland.																				
Deer Park	Garrett	2,457	20	35.2	+ 9.1	62	20	8	9	36	5.85	+ 2.06	0.93	9.1	15	.....	.....	.....	.....	S. P. Specht.
Grantsville	do.	2,351	20	36.6[a]	+ 9.7	60[a]	†8	8[a]	9	37[a]	5.14	+ 1.55	1.00	12.5	14	5	5	21	.....	J. S. Miller.
Oakland	do.	2,461	14	36.2	+ 9.2	62	20	10	10†	44	5.53	+ 0.84	0.84	12.3	19	8	7	16	w.	R. E. Weber.
West Virginia.																				
Bancroft	Putnam	574	10	40.8	+ 6.3	68	20	21	4	39	6.89	+ 3.02	1.75	3.0	14	8	0	23	ne.	R. E. Dent.
Beckley	Raleigh	2,440	14	38.6	+ 6.2	65	11	15	28	42	4.61	+ 1.03	1.02	5.0	9	14	5	12	w.	John A. Ewart.
Bens Run	Pleasant	622	12	41.0	+ 9.6	67	20†	22	13†	36	8.48	+ 4.44	1.70	4.0	16	13	3	15	.....	J. D. Riggs.
Bluefield	Mercer	2,563	19	44.2	+10.5	69	7	19	3†	40	3.51	+ 0.51	1.06	.....	7	13	7	11	.....	Norfolk & Western Ry.
Buckhannon	Upshur	1,472	23	40.9	+ 9.6	65	6†	18	4†	39	7.29	+ 3.33	0.90	5.0	16	11	2	18	.....	H. A. Darnall.
Cairo	Ritchie	667	11	39.4	+ 5.4	65	21	20	3†	41	8.77	+ 4.73	2.10	3.0	19	2	11	18	w.	Van A. Zevely.
Central Station	Doddridge	900	11	40.6	+ 9.6	66	20	18	5†	37	5.67	+ 2.22	0.82	7.0	18	6	7	18	w.	G. W. Sherwood.
Charleston	Kanawha	598	28	47.2	+ 8.4	70	11†	24	13	39	6.74	+ 3.15	1.34	4.0	16	10	4	17	w.	R. C. Hewes.
Creston	Wirt	612	12	41.5[a]	+ 8.7	67	20	20[a]	14	35[a]	7.76	+ 4.47	1.94	5.5	20	7	3	21	w.	J. M. Reed.
Cuba	Jackson	544	13	41.5	+ 8.6	68	20	19	4†	43	8.42	+ 5.15	2.18	3.5	17	5	10	16	w.	C. T. Perry.
Doane	Wayne	.....	6	.....	.....	.....	.....	.....	.....	.....	8.12	.....	1.86	.....	14	10	9	12	w.	L. A. Smith.
Elkhorn	McDowell	1,933	21	45.6	+ 9.3	69	7†	20	4	35	6.41	+ 3.46	0.85	6.0	14	11	8	12	w.	J. J. Lincoln.
Elkins	Randolph	1,940	14	41.2	+12.1	65	20	17	13	40	5.30	+ 1.96	0.94	2.1	20	6	10	15	s.	U. S. Weather Bureau.
Fairmont	Marion	879	21	39.8	.....	64	20	20	10†	39	6.99	+ 3.27	2.06	6.0	20	13	1	17	s.	F. P. Hall.
Glenville	Gilmer	738	24	42.8	+10.4	70	20	20	13	42	7.89	+ 3.79	1.60	2.0	16	7	5	19	s.	Joe N. Craddock.
Grafton	Taylor	985	21	42.3	+10.4	67	20	19	9	40	8.42	+ 4.69	2.10	4.5	19	12	1	18	.....	Joseph Gerken.
Green Sulphur Springs	Summers	1,600	18	40.6	+ 8.1	68	19	10	10	46	3.54	+ 0.68	0.83	2.0	12	8	9	14	w.	Arthur George.
Hinton	do.	1,400	24	41.9	+ 7.4	66	20	21	10	40	3.58	+ 0.65	0.88	0.5	15	13	0	18	sw.	J. B. Lavender, C. E.
Holcomb	Nicholas	.....	1	39.6[a]	.....	67[a]	20	12	4	41[a]	6.41	.....	.....	14.0	12	11	6	14	.....	R. E. Ferguson.
Huntington	Cabell	510	18	41.6	+ 9.0	68	20	25	4†	39	6.92	+ 3.40	1.68	1.5	13	10	1	20	s.	L. H. Hutchinson
Lewisburg	Greenbrier	2,200	13	39.4	+ 7.7	60	7†	16	10	35	3.47	+ 0.10	0.87	7.0	9	19	6	6	sw.	Geo. T. Argabrite.
Logan	Logan	665	11	45.4[j]	+ 6.4	71	20	.....	.....	.....	7.02	+ 2.34	.....	3.5	.....	.....	.....	.....	.....	Dr. J. E. McDonald.
Lost Creek	Harrison	1,033	17	39.5	+ 6.9	64	20	14	10	44	7.68	+ 3.97	1.65	3.5	16	11	2	18	w.	Allen Smith.
Madison	Boone	704	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. E. Bradley.
Mannington	Marion	967	11	39.7	+ 9.4	65	20	16	5	38	8.58	+ 4.19	1.57	8.5	19	11	2	18	w.	Jas. A. Morgan.
Marlington	Pocahontas	2,169	17	34.4	+ 5.9	55	11†	10	10	34	4.42	+0.97	0.90	4.0	11	15	11	5	.....	C. J. McCarty.
Morgantown	Monongahela	1,250	39	40.8[e]	+ 9.0	64	20	16	14	35[e]	7.70	+ 3.81	1.31	6.0	15	8[e]	8[e]	12[e]	s.	Horace Atwood.
Moundsville	Marshall	640	11	41.2	+ 9.5	66	20	21	10†	40	6.16	+ 3.07	1.16	.....	16	10	0	21	sw.	M. L. Brown.
New Cumberland	Hancock	987	14	38.0	+10.2	62	20†	12	5	42	6.05	+ 3.64	1.20	6.0	14	8	3	20	w.	Frank S. Evans.
New Martinsville	Wetzel	634	20	40.6	+ 8.2	68	20	21	5	32	7.39	+ 3.95	1.42	.....	15	7	9	15	s.	Wm. Ankron.
Nuttallburg	Fayette	2,252	21	37.5[h]	+ 6.0	64	11	18	13	40[h]	4.30	+ 1.17	1.20	8.0	7	8[h]	8[h]	7[h]	.....	Miss Donna Tully.
Parkersburg	Wood	638	25	42.2	+10.9	68	20	23	3	34	8.22	+ 5.03	2.97	3.5	20	6	5	20	s.	U. S. Weather Bureau.
Parsons	Tucker	1,662	14	38.7	+ 7.5	66	20	14	9†	48	5.72	+ 0.82	0.90	11.0	16	9	11	11	.....	J. W. Swisher.
Philippi	Barbour	1,192	21	41.8	+10.0	67	20	16	10	39	7.35	+ 3.37	1.17	10.8	22	12	7	12	w.	J. D. Dadisman.
Pickens	Randolph	2,785	23	41.0	+10.0	62	20	15	13	38	8.67	+ 2.44	1.65	18.0	15	11	5	15	w.	Dr. J. L. Cunningham.
Point Pleasant	Mason	553	23	42.6	+ 9.2	69	20	22	4†	39	8.18	+ 4.67	2.96	3.0	16	11	1	19	sw.	W. D. Holmes.
Powellton	Fayette	904	16	46.4	+10.7	74	11	21	13	40	5.81	+ 2.13	0.83	6.2	16	6	11	14	.....	Morris Hansford.
Princeton	Mercer	2,469	13	38.4	+ 6.7	66	7	16	4	34	8.00	+ 2.63	1.25	12.0	14	11	8	12	w.	H. Scott.
Robertsburg	Putnam	574	13	40.7	+ 6.8	68	20	21	4	43	6.41	+ 2.84	1.85	3.0	14	8	2	21	s.	E. P. Turley.
Ryan	Roane	639	10	41.4	+ 8.3	69	20	17	10	42	6.26	+ 2.41	1.40	5.0	17	6	4	21	.....	Wm. E. Ryan.
Smithfield	Wetzel	919	9	38.2	.....	63	16	13	1	45	10.53	.....	2.10	8.5	23	11	1	19	nw.	G. M. Whisler.
Spencer	Roane	710	15	41.8	.....	70	20	19	13	47	6.10	+ 2.05	1.31	5.0	13	3	10	18	.....	A. M. McKown.
Sutton	Braxton	839	10	45.1[i]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. E. Baughman
Terra Alta	Preston	3,207	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. B. Elliott.
Union	Monroe	.....	9	37.8	+ 4.8	66	7	16	10†	45	4.38	.....	0.98	3.0	13	.....	.....	.....	.....	Shelton Clark.
Valley Fork	Clay	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Miss Blanche Pierson.
Wellsburg	Brooke	1,225	19	38.2	+ 9.6	62	20	18	9†	36	5.93	+ 2.46	0.90	10.5	16	9	4	18	sw.	D. H. Hamrick.
Weston	Lewis	824	25	40.9	+ 7.4	64	6†	18	10	40	6.80	+ 2.67	1.20	7.4	15	2	10	19	sw.	Miss C. M. Davis.
Wheeling	Ohio	645	29	39.9[e]	.....	65[e]	20	23[e]	4†	36[e]	6.73	+ 3.79	1.37	6.3	21	9	3	19	s.	Miss M. B. Forsyth.
Williamson	Mingo	660	12	43.0	+ 7.0	70	6†	20	4	47	7.40	+ 3.67	2.14	3.0	16	10	4	17	w.	J. F Keyser.
Ohio.																				
Amesville	Athens	630	9	39.6	.....	65	20†	15	4	40	7.92	.....	1.22	3.5	19	6	8	17	sw.	F. W. Gibson.
Bangorville	Richland	1,380	26	34.0	+ 7.7	58	20	7	9	38	10.00	+ 6.76	1.42	13.0	21	5	7	19	sw.	S. M. Painter.
Bellefontaine	Logan	1,276	34	34.3	+ 7.1	57	20	8	9	31	4.99	+ 2.43	1.23	14.0	18	8	8	15	w.	Cory L. Lane.
Bladensburg	Knox	1,100	20	35.4	+ 8.3	58	20	5	5	37	7.01	+ 3.99	1.16	9.8	18	4	12	15	sw.	Miss Mary Elliott.

TABLE 1.—*Climatological data for January, 1913. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observer.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio—Continued.																				
Brilliant	Jefferson	700	....	42.6	.....	63	21	20	4	38	4.50	.....	0.70	5.0	10	7	5	19	w.	Mrs. Mary K. Pennell.
Cadiz	Harrison	1,245	9	37.4	.....	61	20	17	13	34	7.15	.....	1.20	13.2	17	8	4	19	sw.	Harry B. McConnell.
Cambridge	Guernsey	803	21	37.4	+ 9.0	63	20	15	5	35	7.54	+ 4.50	1.09	6.0	16	2	16	13	.....	Samuel Mehaffey.
Camp Dennison	Hamilton	570	20	40.0	+ 8.6	64	20	15	9	31	9.28	+ 5.96	1.83	2.0	16	12	6	13	s.	Henry F. Pinkvoss.
Canal Dover	Tuscarawas	884	20	36.8	+ 8.9	58	8	8	5	30	6.58	+ 3.47	1.20	13.0	17	6	7	18	s.	Ed. S. Slingluff.
Canton	Stark	1,089	30	35.1	+ 8.0	59	20	8	5	35	6.84	+ 3.85	1.05	12.5	20	11	3	17	sw.	Carl H. Meyer.
Cardington	Morrow	1,010	18	35.8	+ 9.5	58	11†	8	9†	50	6.83	+ 4.27	1.05	.....	16	6	0	25	sw.	J. W. Shaw.
Chillicothe	Ross	630	10	.....	.....	.....	.....	.....	.....	.....	7.11	.....	1.60	0.5	14	.....	.....	.....	.....	Marion Mackey.
Cincinnati	Hamilton	628	42	40.6	+ 8.3	64	20	12	31	40	9.02	+ 5.66	1.79	1.5	18	3	8	20	se.	U. S. Weather Bureau.
Circleville	Pickaway	694	25	38.8	+ 8.6	64	20	18	4†	39	7.73	+ 4.93	1.20	.....	16	9	6	16	s.	Dr. H. R. Clarke.
Clarington	Monroe	600	10	39.3	+ 8.1	66	20	18	4	42	7.79	+ 3.70	1.25	9.0	19	7	7	17	sw.	Col. S. Tschappat.
Columbus	Franklin	918	35	36.8	+ 8.2	62	20	8	31	40	6.63	+ 3.68	1.19	5.9	19	7	5	19	s.	U. S. Weather Bureau.
Coshocton	Coshocton	770	4	.....	.....	.....	.....	.....	.....	.....	7.52	.....	1.06	.....	18	.....	.....	.....	.....	Mrs. Ada Jeffries.
Dayton (1)	Montgomery	899	2	36.9	+ 7.3	60	20	8	31	42	6.66	+ 3.65	1.02	3.0	19	4	6	21	s.	U. S. Weather Bureau.
Dayton (2)	....do	790	32	37.6	+ 8.7	61	20	15	9	35	7.43	+ 4.35	0.99	5.8	20	.....	.....	.....	.....	Mrs. Edith L. Boyer.
Delaware	Delaware	896	16	33.8	+ 5.2	59	20	7	9	32	6.93	+ 4.12	1.33	7.0	16	10	3	18	s.	De Witt H. Leas.
Demos	Belmont	1,325	25	37.3	+ 8.0	60	20†	17	10†	38	7.57	+ 4.83	0.92	7.9	19	12	3	16	s.	J. T. Dysart.
Dennison	Tuscarawas	846	3	37.7	.....	61	20	13	5	35	7.61	.....	1.12	13.8	19	10	8	13	s.	Water Supply Co.
Frankfort	Ross	745	21	39.4	+ 8.3	65	17	19	2	34	7.44	+ 4.56	1.20	3.0	18	6	5	20	s.	O. A. Cory.
Gallipolis	Gallia	580	1	.....	.....	.....	.....	.....	.....	.....	7.22	.....	2.40	3.0	15	.....	.....	.....	.....	Samuel F. Neal.
Garrettsville	Portage	1,005	29	34.1	+ 9.0	57	20	4	5	40	6.43	+ 3.44	1.21	12.2	18	5	6	20	sw.	S. M. Luther.
Granville	Licking	960	31	36.8[a]	+ 9.6	60[a]	20	15[a]	9	34[a]	7.63	+ 4.61	1.05	9.5	19	10	1	20	sw.	Dr. L. E. Davis.
Gratiot	....do	1,000	24	36.6	+ 7.9	60	20	15	5	35	8.10	+ 5.27	1.11	10.1	19	6	10	15	sw.	W. B. Longstreth.
Green	Adams	500	20	42.3	+ 8.8	69	20	19	9	31	8.72	+ 5.09	2.40	3.0	11	12	6	13	se.	W. F. Kenyon.
Green Hill	Columbiana	1,135	20	34.8	+ 8.8	60	20	4	5	38	5.64	+ 2.93	0.80	9.0	19	7	7	17	sw.	Jos. E. Bentley.
Greenville	Darke	1,060	27	35.3	+ 7.7	57	20	15	31	32	8.16	+ 5.24	1.78	5.5	16	3	9	19	s.	Geo. A. Katzenberger.
Hamilton	Butler	601	1	.....	.....	.....	.....	.....	.....	.....	7.82	.....	1.43	3.0	13	.....	.....	.....	.....	Earl W. Stout.
Haydenville	Hocking	700	1	39.1[a]	.....	63[a]	21	12[a]	22	39[a]	7.25	.....	1.52	.....	17	9	5	17	w.	H. W. Stiers.
Hillsboro	Highland	1,063	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Carey H. Roush.
Ironton	Lawrence	575	30	43.2	+10.2	69	20	22	22	37	7.04	+ 3.24	1.37	.....	16	8	10	13	se.	James Bull.
Kenton	Hardin	1,015	21	33.8	+ 6.4	58	20	7	5	25	5.67	+ 2.75	0.93	8.0	17	10	3	18	s.	Frank B. Rarey.
Killbuck	Holmes	1,087	20	36.6	+ 8.8	58	11†	12	5	36	8.33	+ 5.54	1.60	9.5	18	13	6	12	ne.	John A. Schonauer.
King's Mills	Warren	640	1	.....	.....	.....	.....	.....	.....	.....	9.84	.....	1.46	1.1	16	7	2	22	sw.	Frank M. See.
Lancaster	Fairfield	898	18	38.8	+ 9.0	62	20	19	5†	37	9.05	+ 5.82	1.05	.....	18	10	4	17	sw.	R. L. Renshaw.
McConnellsville	Morgan	710	29	38.4	+ 8.2	65	20	18	13†	28	7.35	+ 4.00	1.41	8.2	18	7	5	19	s.	C. H. Morris.
Marietta	Washington	627	93	41.7	+10.1	66	20	21	4	38	7.45	+ 4.24	1.30	3.5	19	4	7	20	s.	Prof. T. D. Biscoe.
Marion	Marion	980	35	34.7	+ 7.8	57	20	7	9	28	10.80	+ 8.01	1.88	15.0	16	7	7	17	se.	Prof. E. H. Raffensperger.
Milfordton	Knox	1,200	21	34.8	+ 9.3	59	20	5	5	40	6.50	+ 3.54	1.03	14.5	17	7	8	16	sw.	L. H. Burgess.
Milligan	Perry	875	20	38.4	+ 8.6	65	20	12	5	38	8.28	+ 5.60	1.17	9.0	17	6	8	17	sw.	V. C. Eveland.
Millport	Columbiana	1,145	20	34.5	+ 7.0	59	20	5	5	41	5.05	+ 2.42	0.81	10.3	18	9	2	20	sw.	G. F. Copeland.
Nellie	Coshocton	850	13	37.2	+ 8.8	60	2	8	5	40	7.87	+ 5.15	1.25	11.0	19	3	8	20	s.	Ethel L. Sammertsfelder.
New Berlin	Stark	1,100	20	34.0	+ 7.5	56	20	5	5	36	7.15	+ 4.67	1.55	13.0	18	11	0	20	s.	Clayton Holl.
New Waterford	Columbiana	1,053	18	35.0	+ 7.8	60	20	4	5	41	6.43	+ 3.23	1.63	16.0	12	12	3	16	sw.	Sam. C. Scott.
O. S. University	Franklin	757	30	37.7	+10.3	57	8†	15	9	35	7.35	+ 4.32	1.05	.....	18	2	14	15	s.	Prof. H. C. Lord.
Oregonia	Warren	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. H. Stephens.
Pataskala	Licking	1,015	21	36.9	+ 9.3	61	20	13	9	36	7.41	+ 4.16	0.95	9.1	19	3	13	15	s.	J. N. Ridenour.
Peebles	Adams	645	2	40.7	.....	67	20†	15	9†	40	9.96	.....	1.75	4.5	20	9	8	14	nw.	Ora O. Smalley.
Philo	Muskingum	1,018	18	39.5	+ 9.7	66	20	18	9	36	7.72	+ 5.40	1.08	6.2	18	8	4	19	s.	L. C. Burckholter.
Piqua	Miami	847	3	.....	.....	.....	.....	.....	.....	.....	7.83	.....	1.08	8.2	14	11	3	17	se.	Harry L. Roberts.
Plattsburg	Clark	1,130	20	35.8	+ 8.2	60	20	12	9	33	7.14	+ 4.11	1.24	13.5	19	8	6	17	s.	F. E. Stewart.
Portsmouth	Scioto	527	82	41.9	+ 7.2	64	30	24	3†	34	8.99	+ 5.56	2.20	T.	15	4	4	23	sw.	Dr. H. A. Schirrmann.
Prospect	Marion	909	3	.....	.....	.....	.....	.....	.....	.....	9.25	.....	2.75	3.0	12	.....	.....	.....	.....	Neil J. Gast.
Sidney	Shelby	985	30	34.8	+ 8.2	57	20	11	5	26	7.81	+ 5.04	1.57	8.3	20	4	4	23	s.	Hamline B. Blake.
Somerset	Perry	1,080	14	38.2	+ 8.4	62	20	18	4	36	7.22	+ 4.11	0.80	8.5	16	5	12	14	s.	Miss M. W. C. Sheridan.
Springfield	Clark	980	19	.....	.....	.....	.....	.....	.....	.....	7.07	+ 4.01	1.08	.....	20	6	10	15	sw.	W. A. Webster.
Summerfield	Noble	1,187	7	39.0	.....	63	20†	16	5†	39	8.05	.....	1.08	9.1	19	9	8	14	sw.	H. R. McClintock.
Syracuse	Meigs	583	2	43.0	.....	70	20†	20	22	36	7.57	.....	2.54	3.0	17	8	8	15	w.	Irving R. Karr.
Thurman	Gallia	696	20	42.1	+ 9.3	69	20	20	4†	40	6.93	+ 3.94	2.00	4.0	10	6	9	16	.....	D. D. Thomas.
Toboso	Licking	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.82	.....	1.72	10.0	19	6	4	21	sw.	H. A. Albyn.
Urbana	Champaign	1,031	45	34.6	+ 7.0	59	20	8	5	34	8.29	+ 5.64	0.98	11.7	19	5	9	17	sw.	Prof. J. H. Williams.
Warren	Trumbull	900	24	34.2[i]	+ 7.5	56[i]	8	8[i]	5	33[i]	6.44	+ 3.45	.....	12.6	.....	.....	.....	.....	.....	M. D. McCorkle.
Waverly	Pike	590	30	40.4	+ 9.5	67	20	17	4	37	6.03	+ 2.57	0.97	2.8	17	7	3	21	s.	Dr. Peru Hutt.
Waynesville	Warren	700	28	37.8	+ 8.1	61	20	15	9	33	7.88	+ 4.54	1.20	3.5	18	9	5	17	sw.	Charles Michener.
Wooster	Wayne	1,030	34	34.2	+ 7.9	57	20	4	5	37	7.86	+ 4.65	0.86	15.2	19	4	3	24	sw.	Experiment Station.
Youngstown	Mahoning	846	20	.....	.....	.....	.....	.....	.....	.....	4.96	+ 2.65	0.99	7.0	17	7	6	18	sw.	J. M. Dickey.
Zanesville	Muskingum	700	26	.....	.....	.....	.....	.....	.....	.....	7.32	+ 4.33	1.37	4.0	16	10	0	21	s.	S. G. Sprague.
Indiana.																				
Anderson	Madison	892	18	34.9	+ 6.1	58	20	12	4	31	6.56	+ 3.94	1.31	10.7	17	5	8	18	s.	W. H. Stanton.
Attica	Fountain	522	3	.....	.....	.....	.....	.....	.....	.....	7.33	.....	2.01	5.3	17	.....	.....	.....	.....	J. Frederic Connell.
Bloomington	Monroe	744	18	34.8	+ 4.2	62	20	15	13†	37	10.82	+ 7.47	2.52	4.8	16	9	4	18	se.	Earl E. Ramsey.
Bluffton	Wells	835	18	32.2	+ 5.4	57	26	10	13†	34	6.88	+ 4.47	1.12	.....	15	7	3	21	sw.	George R. Rinehart.
Butlerville	Jennings	767	28	38.6	+ 8.1	60	20	17	13	32	12.12	+ 8.10	1.92	6.8	18	11	3	17	s.	C. F. Hole.
Cambridge City	Wayne	941	22	33.7	+ 6.8	64	20	13	5	38	8.30	+ 5.41	1.10	.....	13	8	0	23	s.	Heze Barnett.
Columbus	Bartholomew	632	30	36.8[d]	+ 7.6	60[e]	20	14[d]	13	36[e]	.....	.....	.....	.....	.....	5[d]	2[d]	20[d]	.....	John A. Perry.
Connersville	Fayette	769	31	36.9	+ 9.1	60	20	11	9	34	7.70	+ 4.61	1.08	6.5	14	6	9	16	sw.	H. T. Swindler.
Crawfordsville	Montgomery	780	3	34.2	.....	58	20	8	21	31	6.78	.....	1.30	2.0	10	11	3	17	sw.	P. H. Burns.
Delphi	Carroll	668	28	30.6	+ 5.4	56	19	7	13	39	7.48	+ 4.85	2.03	5.9	17	3	11	17	.....	L. A. Higginbotham.
Eminence	Morgan	782	7	35.4	.....	60	20	13	21	36	7.39	.....	1.52	0.5	13	14	5	12	sw.	E. E. Kelso, M. D.
Evansville	Vanderburg	386	37	39.4	+ 7.1	61	5	14	31	31	10.27	+ 6.58	2.69	2.7	17	5	11	15	s.	U. S. Weather Bureau.
Farmersburg	Sullivan	.....	15	35.6	+ 5.0	59	20	11	12	37	7.11	+ 5.26	1.40	2.5	14	2	20	9	s.	Miss Carrie Yeager.
Farmland	Randolph	1,101	31	34.4	+ 7.2	58	20†	16	4†	35	7.70	+ 4.97	1.20	.....	16	9	2	20	s.	Ralph E. Lyst.
Forest Reserve	Clark	478	....	39.0	.....	62	20	17	13	30	10.35	.....	2.12	3.5	19	7	9	15	.....	Ambrose Waltman.
French Lick	Orange	506	....	37.8	.....	62	21	18	13	43	11.19	.....	1.72	2.8	15	9	12	10	.....	U. S. Weather Bureau.
Greenfield	Hancock	905	10	35.6	.....	59	20†	14	13	32	6.67	.....	1.35	5.0	15	0[a]	16[a]	14[a]	w.	Frank Larrabee.
Greensburg	Decatur	954	17	35.7	+ 5.6	55	17	16	13†	28	5.85	+ 2.67	0.85	6.0	15	10	8	13	sw.	C. C. Morrison, M. D.
Hickory Hill	Brown	.....	....	37.3	.....	61	20	14	13	36	8.91	.....	1.25	3.8	17	16	1	14	.....	Benjamin W. Douglass.
Huntingburg	Dubois	462	5	36.0	.....	61	19	8	12	42	11.99	.....	2.57	.....	17	.....	.....	.....	.....	H. Dufendach.
Huntington	Huntington	741	20	31.8	+ 5.3	55	17	8	13	32	6.31	+ 3.65	1.50	8.7	16	6	16	19	sw.	Chas. McGrew.
Indianapolis	Marion	822	41	35.1	+ 6.9	59	20	5	31	41	7.63	+ 4.82	1.58	1.7	17	3	9	19	s.	U. S. Weather Bureau.
Jeffersonville	Clark	455	31	41.9	+ 7.7	66	20	24	9†	31	11.11	+ 7.34	2.46	1.0	17	7	11	13	s.	John C. Loomis.
Judyville	Warren	450	6	31.2[a]	.....	55[a]	20	5[a]	13†	33[a]	3.71	.....	1.20	5.3	14	10[a]	1[a]	19[a]	s.	W. A. Hill.
Kokomo	Howard	840	21	32.4	+ 5.3	56	20†	6	13	31	6.94	+ 4.32	1.60	4.2	16	3	9	19	sw.	P. H. Robertson.
Lafayette	Tippecanoe	617	34	31.0	+ 5.6	57	19	7	13	35	6.76	+ 4.29	1.85	4.7	16	11	5	15	sw.	Wm. J. Jones, jr.

TABLE 1.—*Climatological data for January, 1913. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Indiana—Continued.																				
Logansport	Cass	620	33	31.4	+ 6.2	57	19†	9	13†	41	7.12	+ 4.97	1.60	4.0	17	8	1	22	e.	Chas. Massena.
Madison	Jefferson	460	21	41.4	+ 8.3	63	20	20	9†	33	10.79	+ 7.00	1.94	1.0	18	9	5	17	se.	Miss F. Cooperider.
Marengo	Crawford	363	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. M. Johnson.
Marion	Grant	814	27	33.2	+ 6.1	57	20	10	13	29	7.57	+ 5.02	1.75	9.7	17	5	11	15	nw.	James F. Hood.
Mauzy	Rush	980	33	35.4	+ 9.1	58	20	12	9	34	8.24	+ 4.99	1.30	10.4	16	6	8	17	s.	Elwood Kirkwood.
Monticello	White	674	3	.....	.....	.....	.....	.....	.....	.....	6.50	.....	1.45	7.5	12	8	7	16	s.	J. E. Loughry.
Moores Hill	Dearborn	980	12	38.4	+ 8.4	60	20	17	9	33	9.06	+ 5.69	1.60	4.1	18	9	4	18	s.	W. S. Bigney.
Mount Vernon	Posey	410	27	37.8	+ 4.3	60	5	15	13	31	9.80	+ 6.34	1.90	T.	15	6	5	20	se.	Guy B. Green.
Nashville	Brown	.....	.....	36.2	.....	59	20	12	13	33	9.51	.....	2.03	5.2	13	5	8	18	w.	W. C. Goble.
Paoli	Orange	611	16	39.2	+ 6.6	62	20	16	12	35	10.59	+ 7.30	2.27	4.5	17	6	11	14	sw.	James A. Gillum.
Princeton	Gibson	481	31	38.6	+ 7.6	60	20	14	12	30	9.89	+ 6.56	1.92	2.0	14	9	3	19	sw.	Albert Mills.
Richmond	Wayne	972	28	35.6	+ 8.4	59	20	8	4	27	7.64	+ 4.83	1.55	6.3	17	5	13	13	.....	Walter Vossler.
Rochester	Fulton	775	8	31.0	.....	53	17†	10	21	27	5.67	.....	1.20	5.5	12	8	11	12	.....	G. P. Keith.
Rockville	Parke	722	27	34.6	+ 6.4	59	20	7	12	35	6.73	+ 4.27	1.60	3.4	14	4	11	16	s.	C. A. Lee.
Rome	Perry	370	10	42.6	+ 6.5	64	20†	20	12	35	12.20	+ 7.44	3.50	3.0	18	9	6	16	sw.	Adam Anspach.
Salamonia	Jay	950	8	32.8	.....	58	20	9	4†	29	8.93	.....	1.26	16.3	18	6	7	18	sw.	S. A. Armstrong.
Salem	Washington	717	20	38.9	+ 6.9	61	20	18	4†	33	11.50	+ 7.87	1.95	4.5	19	2	12	17	s.	Emmet S. Allen.
Scottsburg	Scott	570	19	39.2[a]	+ 5.9	62[b]	20	20	9†	28[b]	10.78	+ 7.22	2.21	4.0	16	7	8	16	s.	Frank H. Park.
Seymour	Jackson	610	26	39.4	+ 7.8	62	20	19	13	30	9.70	+ 6.13	1.65	3.5	15	4	14	13	nw.	J. Robt. Blair.
Shelbyville	Shelby	768	9	36.2	.....	58	20†	15	5	28	8.48	.....	1.34	8.3	16	2	13	15	sw.	Edgar G. Hodson.
Shoals	Martin	523	6	38.6	.....	60	20†	18	12	33	9.64	.....	1.43	3.0	14	11	1	19	s.	Rev. G. Halleck Rowe.
Terre Haute	Vigo	498	23	34.8	+ 5.0	60	20	5	31	40	7.71	+ 5.06	2.30	2.1	16	3	14	14	s.	U. S. Weather Bureau.
Veedersburg	Fountain	612	14	33.2	+ 5.4	58	20	6	12	32	6.41	+ 4.03	1.90	3.5	16	11	5	15	s.	L. A. Culver, jr.
Vevay	Switzerland	525	32	42.2	+ 9.8	64	20	18	9	32	11.55	+ 7.57	2.25	T.	14	4[a]	7[a]	19[a]	ne.	Miss Frederica Boerner.
Vincennes	Knox	431	21	36.8	+ 5.8	60	20	17	13†	30	11.35	+ 8.13	2.00	1.0	16	9	0	22	s.	Garrett V. List.
Washington	Daviess	484	17	37.8	+ 6.4	60	21	14	12	42	10.81	+ 7.40	1.61	T.	14	11	9	11	w.	Charles C. Feagans.
Whitestown	Boone	529	5	32.6	.....	58	20	13	21†	37	7.57	.....	1.69	5.8	16	3	17	11	nw.	Clyde O. Laughner.
Winona Lake	Kosciusko	865	6	30.4	.....	55	26	7	13	27	5.81	.....	1.18	6.1	17	1	16	14	sw.	Rev. Albert A. Young.
Worthington	Greene	526	31	36.9	+ 7.9	59	20	14	12	29	8.40	+ 5.39	1.07	5.0	15	6	11	14	sw.	D. W. Solliday.
Illinois.																				
Albion	Edwards	531	22	37.8	+ 6.0	59	20†	13	12	29	9.37	+ 6.08	1.42	2.3	14	10	3	18	sw.	B. F. Michels.
Casey	Clark	645	10	.....	.....	.....	.....	.....	.....	.....	6.98	+ 4.64	2.05	T.	11	9	6	16	sw.	William Chenoweth.
Charleston	Coles	720	28	33.8[a]	+ 5.6	58[a]	20	12[a]	21	33[b]	4.93	+ 2.66	1.50	1.8	....	3	14	14	s.	Jacob B. Daisy.
Danville	Vermilion	604	12	33.2	+ 6.7	57	20	5	12	38	7.17	+ 4.25	2.10	4.3	17	9	6	16	s.	J. J. Lemon.
Equality	Gallatin	421	15	41.1	+ 5.6	63	6	15[a]	12	31[a]	9.89	+ 5.60	2.30	2.0	16	13	2	16	s.	Dr. L. W. Gordon.
Fairfield	Wayne	450	20	37.4	+ 4.2	59	20	12	12	30	10.18	+ 7.07	1.53	3.0	14	4	12	15	nw.	Geo. A. Tromly.
Flora	Clay	495	27	36.2	+ 5.8	59	20	11	12†	31	7.82	+ 4.63	1.36	2.0	13	9	7	15	sw.	W. L. Hanna.
Golconda	Pope	500	35	40.1	+ 6.0	61[a]	20	17	12	29[a]	12.66	+ 8.74	2.58	1.0	11	11	7	13	w.	Dr. D. Lawrence.
Hoopeston	Vermilion	715	11	31.1	+ 3.8	54	17†	2	12	40	6.21	+ 2.98	1.15	5.7	17	8	8	15	.....	S. F. Hoskinson.
McLeansboro	Hamilton	462	30	37.7	+ 6.0	60	20	12[a]	12	30[a]	9.55	+ 6.36	1.70	2.0	15	15	1	15	s.	Prof. W. C. Fairweather.
Metropolis	Massac	346	2	.....	.....	.....	.....	.....	.....	.....	11.83	.....	3.15	0	8	13	3	15	n.	Henry H. Humma.
Montrose	Effingham	599	3	34.0	.....	59	20	8	12	35	6.31	.....	1.44	0.5	12	6	12	13	sw.	J. C. Spitler.
Mount Carmel	Wabash	424	12	36.5	+ 4.6	60	19†	15	12†	33	9.76	+ 5.63	1.84	3.0	16	7	3	21	s.	Mrs. H. M. Phillips.
New Burnside	Johnson	613	18	38.6	+ 3.7	63	17	13	12	34	9.33	+ 5.69	2.38	1.0	15	16	3	12	nw.	Thomas H. McCabe.
Newton	Jasper	484	2	.....	.....	.....	.....	.....	.....	.....	6.56	.....	1.29	1.5	14	10	8	13	.....	J. M. Hicks.
Olney	Richland	486	26	34.4	+ 2.6	59[a]	19	11	12†	34[a]	9.01	+ 5.97	1.33	.....	14	6	11	14	nw.	John T. Ratcliff.
Palestine	Crawford	500	31	36.6	+ 7.5	59	20	12	13	28	7.02	+ 3.99	1.09	1.0	15	11	5	15	s.	Duane Shaw.
Paris	Edgar	600	20	30.6	+ 2.5	59[b]	16	7	12	32[b]	7.42	+ 4.82	1.65	0.5	12	4	16	11	nw.	H. P. Twyman.
Philo	Champaign	700	29	31.3	+ 5.4	57	20	5	12	38	6.69	+ 4.23	1.74	3.0	17	7	10	14	nw.	H. A. Burr.
Rantoul	do	768	22	31.6	+ 5.9	55	20	2	12	41	5.48	+ 3.17	1.05	4.5	16	10	3	18	sw.	William Breiner.
Rileyville	Saline	400	16	.....	.....	.....	.....	.....	.....	.....	9.45	+ 6.11	1.99	2.1	14	8	6	17	nw.	W. H. Thornberry.
Shawneetown	Gallatin	307	3	.....	.....	.....	.....	.....	.....	.....	11.35	.....	2.00	2.0	14	.....	.....	.....	.....	Mrs. Mary O. Spivey.
Tuscola	Douglas	644	20	.....	.....	.....	.....	.....	.....	.....	6.75	+ 4.17	1.85	1.8	14	8	12	11	sw.	Joseph O'Neal.
Urbana	Champaign	725	11	30.8	+ 5.1	58	20	3	12†	40	5.45	+ 2.87	1.19	3.0	14	1	16	14	.....	Prof. J. G. Mosier.
Kentucky.																				
Alpha	Clinton	.....	19	48.8	+ 8.5	68	16	25	13	31	11.76	+ 6.91	3.15	2.0	12	12	3	16	w.	W. W. Hicks.
Anchorage	Jefferson	700	12	41.2	+ 7.7	65	20	19	4†	38	10.84	+ 7.48	2.72	2.0	15	12	3	16	sw.	C. E. Barrett.
Bardstown	Nelson	637	16	42.3	+ 6.5	67	20	21	9	35	13.99	+ 9.72	2.70	1.0	14	6	6	19	s.	T. S. Talbott.
Beattyville	Lee	650	9	42.0	+ 7.5	76	7	17	4	50	10.24	+ 6.23	2.58	4.0	14	6	7	18	e.	G. W. Cann.
Beaver Dam	Ohio	441	10	42.1	+ 7.3	69	6	20	13	35	13.85	+ 9.41	3.15	1.0	13	9	4	18	s.	W. T. Austin.
Berea	Madison	1,070	12	45.8	+ 8.8	67	8†	21	14	41	9.84	+ 6.00	2.52	T.	12	14	7	10	sw.	C. F. Rumold.
Blandville	Ballard	445	32	40.6	+ 7.2	67	5	16	12	35	12.47	+ 8.06	2.61	T.	11	9	4	18	se.	E. W. Horr.
Bowling Green	Warren	500	24	42.6	+ 5.6	67	20	21	4†	39	12.76	+ 8.25	3.40	2.0	13	10	0	21	s.	Mrs. L. G. Causey.
Burnside	Pulaski	773	22	.....	.....	.....	.....	.....	.....	.....	9.20	+ 5.45	2.70	0.2	13	.....	.....	.....	.....	G. M. Estes.
Calhoun	McLean	397	10	42.4	+ 5.5	66	5	19	12	34	12.70	+ 7.80	3.62	0.5	16	4	12	15	sw.	W. A. Taylor.
Catlettsburg	Boyd	544	24	.....	.....	.....	.....	.....	.....	.....	7.56	+ 3.66	2.00	2.0	18	.....	.....	.....	.....	Mrs. Mertie M. Bruns.
Earlington	Hopkins	370	23	40.7	+ 5.1	68	5	13	12†	41	11.97	+ 7.84	3.50	T.	10	5	2	24	n.	Brick Southworth.
Edmonton	Metcalfe	600	22	45.5	+ 9.6	68	20	23	1†	38	14.77	+10.72	4.87	2.0	17	8	11	12	s.	Miss Lee Ray.
Eubank	Pulaski	1,177	19	42.5	+ 8.1	67	20	21	4†	38	11.42	+ 7.75	5.30	0.2	15	8	2	21	s.	Mrs. Katie Payne.
Falmouth	Pendleton	530	24	.....	.....	.....	.....	.....	.....	.....	9.91	+ 6.64	1.70	0.5	16	5	16	10	s.	J. V. Oldham.
Farmers	Rowan	668	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Lee Craycraft.
Frankfort	Franklin	560	22	43.8	+ 7.6	69	20	22	9	35	11.80	+ 8.18	2.57	0.5	17	8	2	21	s.	J. H. Roberts.
Franklin	Simpson	691	19	45.2	+ 7.6	70	20	20	3†	39	14.81	+11.21	5.80	1.5	12	3	19	9	s.	J. E. Newman.
Greensburg	Green	581	21	42.4	+ 8.2	69	5	22	13†	44	12.32	+ 8.29	3.10	T.	16	3	2	26	sw.	Mrs. Bettie K. H. Alcorn.
High Bridge	Jessamine	762	10	.....	.....	.....	.....	.....	.....	.....	10.51	+ 7.19	3.24	1.0	16	.....	.....	.....	.....	Miss Lulu Wood.
Hopkinsville	Christian	524	17	43.0	+ 5.1	69	20	20	12	35	14.53	+10.09	4.00	1.0	14	10	0	21	n.	W. F. Randle.
Irvington	Breckinridge	.....	15	42.6	+ 7.2	66	20	20	12	33	14.33	+10.64	3.01	1.5	15	9	2	20	sw.	W. J. Piggott.
Leitchfield	Grayson	635	17	42.5	+ 7.7	66	20	20	4	38	13.26	+ 8.94	4.00	3.0	11	7	11	13	sw.	John E. Stone.
Lexington	Fayette	989	25	41.6	+ 8.6	66	20	19	9	35	10.35	+ 6.52	3.50	3.7	20	5	8	18	s.	U. S. Weather Bureau.
Loretto	Marion	681	16	44.5	+ 8.3	68	20	20	9†	42	10.29	+ 6.20	2.25	T.	11	12	5	14	.....	Loretto Academy.
Louisa	Lawrence	.....	0	.....	.....	.....	.....	.....	.....	.....	7.35	.....	1.60	2.0	14	.....	.....	.....	.....	Lucien S. Johnson.
Louisville (1)	Jefferson	525	41	41.4	+ 7.1	66	20	15	31	39	9.91	+ 6.01	2.49	1.0	15	5	8	18	s.	U. S. Weather Bureau.
Louisville (2)	do	.....	3	42.6	.....	65	20	21	9	34	10.66	.....	3.10	1.8	15	5	9	17	s.	W. I. Hunt.
Marion	Crittenden	.....	18	40.6	+ 4.4	65	5	16	12	34	13.27	+ 8.80	2.69	T.	10	11	2	18	s.	B. C. Paris.
Maysville	Mason	524	16	40.0	+ 7.7	68	20	18	10†	40	11.19	+ 7.24	2.25	3.0	19	14	3	14	se.	Mrs. Mary D. Marsh.
Middlesboro	Bell	1,128	18	45.8	+ 8.7	69	7	23	1	38	10.61	+ 6.61	2.40	T.	15	15	6	10	.....	B. H. Perkins.
Mtount Sterling	Montgomery	930	23	40.2	+ 6.4	65	20	18	9	36	9.78	+ 5.40	2.28	1.0	12	8	7	16	s.	James O'Connell.
Owensboro	Daviess	479	16	39.7	+ 4.0	63	19	19	12†	31	10.89	+ 6.90	2.45	T.	12	5	1	25	se.	Henry S. Berry.
Paducah	McCracken	341	24	.....	.....	.....	.....	.....	.....	.....	14.68	+10.42	3.30	T.	12	.....	.....	.....	.....	S. A. Fowler.
Pikeville	Pike	.....	5	.....	.....	.....	.....	.....	.....	.....	5.01	.....	0.90	2.0	12	.....	.....	.....	.....	I. M. Williams.
Richmond	Madison	926	21	43.2	+ 9.5	66	20	21	9	32	11.03	+ 6.96	2.26	3.2	17	8	7	16	.....	J. W. Crooke.

TABLE 1.—*Climatological data for January, 1913. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Kentucky—Continued.																				
St. John	Hardin	777	17	39.2	+ 5.0	63	19	21	4†	37	12.79	+ 8.51	2.40	2.5	14	10	0	21	.....	Bethlehem Academy.
Scott	Kenton	.....	15	41.0	+ 8.9	71	20	17	9	33	10.33	+ 6.85	1.90	4.9	18	5	8	18	s.	E. B. Wilson.
Shelby City	Boyle	1,087	19	42.5	+ 7.9	68	20	18	9†	41	10.89	+ 6.47	2.42	.....	14	11	5	15	sw.	H. F. Ewing.
Shelbyville	Shelby	759	24	42.6	+ 8.9	65	20	21	9	33	13.36	+ 9.39	4.60	2.5	15	5	9	17	sw.	C. R. Burnett.
Taylorsville	Spencer	489	11	43.2	+ 9.4	67	20	21	9	35	12.95	+ 9.28	4.35	0.8	18	7	7	17	s.	E. D. Bourne.
Williamsburg	Whitley	939	17	45.4	+ 7.5	73	7	19	14	43	9.25	+ 5.64	2.70	1.8	13	10	0	21	s.	Noble C. Jones.
Williamstown	Grant	943	11	37.5	+ 5.9	65	20	14	10	39	9.75	+ 6.66	1.69	1.2	17	9	3	19	.....	Miss Rose Carter.
Tennessee.																				
Ashwood	Maury	725	40	47.4	+ 8.1	70	7†	23	13	37	8.82	+ 3.88	1.75	0	15	6	5	20	s.	Mrs. Joseph W. Fleming.
Benton	Polk	880	29	49.4	+ 8.9	74	7	24	14	38	8.64	+ 4.04	2.10	T.	10	8	5	18	s.	George L. Williams.
Birds Bridge	Greene	.....	7	.....	.....	.....	.....	.....	.....	.....	5.08	.....	0.93	3.0	17	12	3	16	e.	David B. George.
Bluff City	Sullivan	.....	18	.....	.....	.....	.....	.....	.....	.....	4.75	+ 2.15	0.93	3.0	14	11	2	18	w.	Walter C. Masengill.
Byrdstown	Pickett	1,026	21	47.6	+ 9.6	69	7†	23	13	43	10.45	+ 6.25	2.10	.....	13	4	9	18	s.	John Lacy.
Carthage	Smith	500	30	47.5	+ 9.9	72	7	20	12	42	10.02	− 5.75	2.40	0.8	15	7	2	22	se.	Earl C. Pickering.
Cedar Hill	Robertson	625	15	44.0	+ 5.4	68	20	22	3†	38	14.63	+10.67	4.70	1.0	16	12	5	14	w.	J. Frank Ruffin.
Celina	Clay	494	10	.....	.....	.....	.....	.....	.....	.....	10.52	.....	3.14	T.	13	6	3	22	n.	Charles M. Anderson.
Charleston	Bradley	709	29	.....	.....	.....	.....	.....	.....	.....	7.21	+ 2.43	1.10	T.	13	5	2	24	s.	John T. Weeks.
Chattanooga	Hamilton	808	34	48.8	+ 8.2	73	7	27	9	39	7.13	+ 1.57	1.50	0.1	18	5	12	14	s.	U. S. Weather Bureau.
Clarksville	Montgomery	500	53	45.6	+ 8.4	70	20	23	12	34	14.70	+10.56	4.20	1.5	16	13	4	14	s.	Prof. James A. Lyon.
Clinton	Anderson	800	29	.....	.....	.....	.....	.....	.....	.....	10.35	+ 5.58	2.00	0.6	13	7	4	20	sw.	Della Evans.
Crossville	Cumberland	1,895	1	44.8	.....	66	7	20	3†	39	10.79	.....	2.20	1.6	19	15	7	9	.....	J. E. Converse.
Dandridge	Jefferson	.....	8	.....	.....	.....	.....	.....	.....	.....	6.84	.....	1.10	.....	12	8	4	19	w.	James E. Swann.
Decatur	Meigs	850	18	46.6	+ 6.9	70	7	15	9	38	9.39	+ 5.33	2.00	0	20	13	8	10	sw.	J. Worth Lillard.
Dickson	Dickson	800	20	45.7	+ 7.3	69	6†	21	13	40	13.72	+ 8.99	3.64	0.5	14	9	5	17	s.	Nathan R. Sugg.
Dover	Stewart	500	17	45.0	+ 5.9	69	5	22	13	36	13.45	+ 9.13	3.70	.....	9	9	7	15	s.	Asa M. Tippit.
Dunlap	Sequatchie	726	4	47.8	.....	71	7	23	4	39	12.07	.....	2.38	0.5	15	6	12	13	.....	S. Bradford Boyd.
Elizabethton	Carter	1,575	22	.....	.....	.....	.....	.....	.....	.....	5.35	+ 2.46	0.90	2.5	14	16	0	15	e.	Charles Boyd.
Erasmus	Cumberland	1,850	16	43.7	+ 6.6	69	7	15	4†	42	10.99	+ 6.12	3.94	0.8	13	8	9	14	se.	Mrs. Sarah E. Ashley.
Florence	Rutherford	560	31	47.0	+ 8.4	71	6	24	13	40	11.81	+ 7.41	3.15	3.0	13	9	6	16	s.	Erastus P. Bell.
Franklin	Williamson	648	25	45.6	+ 7.9	67	7	24	3	36	10.87	+ 6.62	3.21	0.5	13	11	5	15	.....	Young M. Rizer.
Halls Hill	Rutherford	.....	10	.....	.....	.....	.....	.....	.....	.....	11.73	.....	3.60	1.0	13	13	2	16	s.	Edward F. Wright.
Hohenwald	Lewis	983	30	47.0	+ 8.6	69	20	20	13†	41	11.96	+ 7.14	2.25	T.	15	9	10	12	s.	Mrs. Mary Lutzelman.
Iron City	Lawrence	600	18	48.0	+ 7.5	71	7	20	13†	43	11.71	+ 6.93	1.80	0	13	4	17	10	nw.	Capt. H. Paul Seavy.
Jefferson City	Jefferson	.....	3	.....	.....	.....	.....	.....	.....	.....	8.14	.....	1.73	4.0	14	.....	.....	.....	.....	Calvin C. Maddox.
Johnson City	Washington	1,620	20	44.5	+ 8.0	75	7	16	4	42	4.16	+ 1.24	0.93	3.0	11	18	8	5	w.	Ward Crosby.
Johnsonville	Humphreys	364	29	46.0	+ 6.4	70	20	22	13†	38	12.41	+ 8.10	2.70	0	18	7	6	18	s.	Miss Sallie B. Mathews.
Kingston	Roane	.....	29	.....	.....	.....	.....	.....	.....	.....	9.34	+ 4.64	2.02	T.	12	12	0	19	n.	Henry Crumbliss.
Knoxville	Knox	977	42	46.4	+ 9.0	73	7	25	4	40	8.93	+ 3.96	1.91	2.4	18	8	6	17	e.	U. S. Weather Bureau.
Lebanon	Wilson	522	4	47.8	.....	70	7	22	13†	42	9.47	.....	2.20	0.3	14	8	5	18	s.	H. Logan Fields.
Lewisburg	Marshall	727	19	47.8	+ 7.1	72	7	22	13	43	10.69	+ 6.11	2.60	1.5	16	10	6	15	s.	Dr. Robert D. Crutcher.
Liberty	Dekalb	672	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Bratten Evans.
Loudon	Loudon	816	22	.....	.....	.....	.....	.....	.....	.....	8.28	+ 3.55	1.60	1.0	12	5	3	23	w.	Robert W. Clark.
Lynnville	Giles	770	26	45.6	+ 6.5	68	6†	25	13	34	9.48	+ 4.88	2.83	0.5	14	9	7	15	s.	Col. James H. Burrow.
McGhee	Monroe	.....	8	.....	.....	.....	.....	.....	.....	.....	8.07	.....	1.49	3.0	11	13	0	18	e.	Miss Alice L. Headrick.
McMinnville	Warren	1,011	32	49.4	+10.2	74	7	24	9†	40	11.32	+ 6.50	2.25	1.0	13	12	7	12	s.	Horace H. Stiles.
Maryville	Blount	1,050	20	46.0	+ 6.7	72	7	23	3	33	8.11	+ 3.76	1.94	0	8	16	3	12	e.	Mrs. Sam T. Broyles.
Mountain City	Johnson	2,486	16	43.8	+ 9.0	74	7	15	15	46	3.40	− 0.17	0.75	4.0	9	17	10	4	.....	Edward E. Barry.
Nashville	Davidson	654	42	45.4	+ 7.4	69	20	26	8	36	12.30	+ 7.45	3.51	0.5	16	8	6	17	se.	U. S. Weather Bureau.
Newport	Cocke	1,280	23	.....	.....	.....	.....	.....	.....	.....	5.65	+ 2.26	1.07	2.5	13	11	3	17	w.	Dr. Charles T. Burnett.
New River	Scott	1,215	5	.....	.....	.....	.....	.....	.....	.....	10.55	.....	3.30	1.6	11	7	4	20	sw.	Burl W. Buttram.
Palmetto	Bedford	770	23	48.1	+ 8.5	71	6	23	13	39	11.07	+ 6.21	2.02	1.5	14	9	7	15	s.	Mrs. Ross Woods.
Perryville	Decatur	387	17	47.0	.....	70	20	22	13	37	16.24	+11.76	4.42	0	12	11	2	18	.....	Oliver C. Kirksey.
Pinewood	Hickman	.....	7	46.1[4]	.....	71	20	20	1	43[3]	16.62	.....	.....	T.	.....	.....	.....	.....	s.	Miss Carrie Cash.
Rogersville	Hawkins	1,150	29	45.0	+ 8.5	70	6†	14	4	35	6.33	+ 2.76	0.90	0.5	13	11	9	11	w.	Fred Beal.
Rugby	Morgan	1,410	24	44.8	+ 9.2	68	7	17	13	41	9.57	+ 4.60	3.45	1.0	13	5	10	16	n.	Samuel G. Wilson.
Savannah	Hardin	442	30	47.7	+ 7.1	69	19	22	13	37	13.30	+ 8.68	2.30	T.	16	8	5	18	s.	W. H. Carrington.
Sevierville	Sevier	.....	7	45.4	.....	75	7	19	4	39	8.34	.....	1.70	6.5	13	7	3	21	sw.	Herbert O. Eckel.
Sewanee	Franklin	2,000	19	47.6	+ 9.4	66	7	20	9	32	9.76	+ 5.61	2.81	2.0	7	9	1	21	s.	Univ. of the South.
Sparta	White	920	7	47.4	.....	72	7	23	4†	41	10.64	.....	3.00	1.0	11	6	8	17	w.	Ernest H. Hull.
Springville	Henry	377	11	43.8	+ 4.7	67	5†	19	14	36	13.76	+10.27	5.00	T.	16	12	4	15	s.	Hudnall A. Boden.
Tazewell	Claiborne	1,350	16	41.0	.....	70	7	13	4	43	9.84	+ 6.08	2.45	4.0	15	8	0	23	se.	J. Caloway Carr.
Tullahoma	Coffee	1,075	26	48.3	+10.7	69	7†	24	3†	42	11.32	+ 6.20	3.23	1.5	14	5	12	14	s.	Reuben T. Moore.
Walling	White	909	9	.....	.....	.....	.....	.....	.....	.....	12.76	.....	5.00	2.0	11	8	1	22	s.	John K. Roberts.
Waynesboro	Wayne	753	28	46.6	+ 7.1	69	20	20	13	37	11.15	+ 6.71	1.80	1.0	19	7	7	17	s.	Harry C. Boyd.
Wildersville	Henderson	400	17	.....	.....	72	7	22	1	35	13.78	+ 8.79	2.85	0	15	10	4	17	s.	William R. Wilson.
Worsham	Sumner	550	11	.....	.....	.....	.....	.....	.....	.....	15.93	+12.36	5.48	1.0	11	8	2	21	w.	James G. Elizer.
Yukon	Lincoln	850	17	46.3	+ 5.5	68	7	22	3†	37	9.30	+ 4.69	2.20	0	15	5	8	18	s.	William P. Watson.
Alabama.																				
Bridgeport	Jackson	660	13	.....	.....	.....	.....	.....	.....	.....	8.71	+ 5.15	1.42	0	16	.....	.....	.....	.....	R. L. Moore.
Decatur	Morgan	573	31	45.9[4]	+ 4.2	69	20	26	3†	35[3]	9.12	+ 3.84	2.00	0	15	.....	.....	.....	.....	Ernest A. Carriger.
Florence	Lauderdale	563	29	49.6	+ 8.7	71	20	20	9	36	7.98	+ 3.17	1.50	0	11	.....	.....	.....	.....	Robt. E. Coburn.
Guntersville	Marshall	580	3	.....	.....	.....	.....	.....	.....	.....	6.89	.....	1.29	0.5	12	.....	.....	.....	.....	Prof. Oscar Horton.
Madison	Madison	573	19	42.2	+ 1.5	68	5	22	5†	46	6.55	+ 2.33	2.50	0	7	5	10	16	se.	Edward Humphrey.
Riverton	Colbert	360	16	44.4	+ 3.1	71	7	19	13	43	11.12	+ 6.64	2.60	0	14	.....	.....	.....	.....	Ernie J. Moore.
Scottsboro	Jackson	652	30	50.7	+ 9.6	78	7	23	4	43	6.61	+ 1.22	1.31	0	10	11	3	17	w.	H. A. Caldwell.
Tuscumbia	Colbert	488	31	46.8	+ 6.0	71	7	26	13†	35	8.20	+ 3.80	1.19	0	12	.....	.....	.....	.....	Samuel Moore.
Georgia.																				
Diamond	Gilmer	2,020	21	46.3[4]	+ 6.8	69	6	22	9	36	7.31	+ 2.05	1.80	3.0	12	10	7	14	.....	R. A. Kimzey.
North Carolina.																				
Altapass	Mitchell	2,629	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Altapass Inn.
Andrews	Cherokee	1,800	3	46.2	.....	71	7	13	4	43	6.78	.....	1.59	2.0	12	12	11	8	sw.	J. D. Link.
Asheville	Buncombe	2,255	34	45.3	+ 9.9	70	7	22	9	34	2.95	− 1.72	1.36	T.	10	9	11	11	se.	U. S. Weather Bureau.
Banners Elk	Avery	3,750	5	39.8	.....	65	7	13	28	35	4.44	.....	1.30	6.0	9	16	1	14	w.	T. L. Lowe.
Blantyre	Transylvania	1,900	1	44.8	.....	70	8	15	15	42	3.36	.....	0.80	0	12	7	13	11	w.	R. W. Collett
Blowing Rock	Watauga	4,090	4	39.3	.....	59	16	14	3†	33	4.05	.....	1.36	2.5	12	7	11	13	sw.	E. G. Underdown.
Brevard	Transylvania	2,230	12	41.5	+ 4.5	66	8	14	14	40	2.81	− 2.92	0.61	T.	8	8	19	4	s.	W. E. Breese.

TABLE 1.—*Climatological data for January, 1913. District No. 3*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***North Carolina*—Contd.**																				
Bryson City	Swain	2,000	25	.....	.....	.....	.....	.....	.....	.....	6.36	+ 2.00	1.31	1.0	14	.....	.....	.....	.....	D. K. Collins.
Cullowhee	Jackson	2,100	3	45.4	.....	72	7	15	15	45	4.18	.....	1.23	0.1	10	11	3	17	nw.	Frank H. Brown.
Hendersonville	Henderson	2,167	16	44.8	+ 8.4	68	7†	17	15	37	3.41	− 1.30	1.02	0	13	20	6	5	nw.	Dr. L. B. Morse.
Highlands	Macon	3,850	23	39.4	+ 6.1	58	19†	15	4	31	7.88	+ 1.73	1.80	0	13	13	6	12	nw.	T. G. Harbison.
Hot Springs	Madison	1,326	15	48.1	+ 7.1	73	7†	21	4	40	4.37	.....	1.27	4.0	11	14	10	7	e.	P. A. Garner.
Jefferson	Ashe	2,900	6	42.4	.....	69	7	13	4	46	2.85	.....	1.22	1.0	11	9	2	20	w.	Prof. E. J. Johnson.
Marshall	Madison	1,646	11	45.0	+ 7.8	71	7	22	9	33	3.68	+ 1.40	1.02	0.8	9	9	4	18	w.	M. L. Church.
Murphy	Cherokee	1,614	37	.....	.....	.....	.....	.....	.....	.....	6.12	+ 0.52	1.12	1.6	12	.....	.....	.....	.....	Miss Victoria Mingus.
Rock House	Macon	3,100	21	43.3	+ 6.2	60	25	20	3	29	7.30	+ 1.01	1.79	0.3	16	8	12	11	sw.	Barry C. Hawkins.
Transon	Ashe	2,600	1	40.9	.....	64	7	14	10	35	3.03	.....	1.35	0	8	14	11	6	sw.	S. M. Transou.
Waynesville	Haywood	2,792	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Judge J. C. L. Gudger.
Virginia.																				
Blacksburg	Montgomery	2,170	22	41.6	+ 9.2	72	7	16	10	38	2.69	− 0.24	1.05	2.0	10	10	8	13	w.	Agricultural Exper. Station.
Burkes Garden	Tazewell	3,250	18	39.0	+ 7.8	65	11	11	4†	46	4.03	+ 0.97	0.85	6.0	9	10	3	18	w.	C. H. Greever.
Elk Knob	Lee	3,243	10	43.6	+ 7.8	65	7	13	4	35	8.59	+ 4.72	1.76	5.0	16	9	7	15	sw.	Henry Nicoll.
Ivanhoe**	Wythe	2,028	9	39.6	.....	68	7	16	14	32	2.68	.....	0.88	0.2	9	15	8	8	w.	Miss Alice G. Jewett.
Lebanon	Russell	2,131	3	43.2	.....	72	7	17	4	44	.....	.....	.....	.....	13	21	0	10	.....	.....
Max Meadows	Wythe	2,028	17	41.2	+ 7.3	72	7	14	10	40	1.88	− 1.28	1.35	1.5	4	15	7	9	w.	James M. Graham.
Mendota	Washington	1,350	4	.....	.....	.....	.....	.....	.....	.....	6.23	.....	0.87	0	14	.....	.....	.....	.....	Frank M. Barker.
Mountain Lake	Giles	4,348	3	.....	.....	64	11	.....	.....	.....	3.50	.....	0.80	5.0	8	13	3	15	n.	H. E. Dorland.
Radford	Montgomery	1,773	4	.....	.....	.....	.....	.....	.....	.....	2.75	.....	1.02	0	4	.....	.....	.....	.....	Arthur Roberts.
Speers Ferry	Scott	1,221	17	.....	.....	.....	.....	.....	.....	.....	8.20	+ 4.35	1.80	2.0	13	.....	.....	.....	.....	Miss L. E. Venable.
Wytheville	Wythe	2,293	20	42.4	+ 9.4	72	7	19	10	36	2.80	− 1.50	1.20	1.0	11	12	7	12	w.	U. S. Weather Bureau.

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 3, Ohio Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
New York.																																	
Allegany	Allegany			1.08	T.	.01	.25	.21	1.02			.40	.39					.45	.39		.37	.48		.51	.08			.01	.01	.02		.19	5.87
Bolivar	do			.74	T.	.25	.18	.28	.80			.34	.48					.60	.05	T.	.08	.40		.42	.04			T.	.05	.15		.04	4.90
Olean ‖	do			.20	.88	T.	.11	.12	.63	T.		.28	.37	T.				.40	.10	.19		.52			.37					T.	.08		4.25
Pennsylvania.																																	
Aleppo	Ohio			.60			.77	.30	1.36			.93	.97			.20	.25	.24			.46		.29	.70			.04	T.	.33			.15	7.59
Baldwin	Allegheny			.40	.25		.65	.35	1.13			.60	.55	.65		.10	.05	.80	.40		.20	.20		.80	.05				.06	.30	.05	.05	7.64
Beaver Dam ‖	Ohio			.06	.18	.03	.20	.34	1.15	.02		.45	.79	.02			.09	.70	.20	.17	.01	.55		.12	.45			.01		.21	.03		5.78
Beaver Falls ‖	do			.05	.33	.05	.10	.31	1.27	.02		.48	.87	T.			.10	.66	.15	.16	T.	.63		.19	.44			T.		.22	.02		6.05
Brookville	Allegheny			.50	.08	.05	.30	.25	.28			.20	.08				.01	.31	.21	.03	.02	.13		.45	.04				.03	.16	.01	.06	3.20
California	Monongahela			.78	.03		.32	.18	1.03	T.		.73	.86				.12	.34	.27		.11	.41		.34	.11			.06	T.	.34		.06	6.09
Cheat Haven	do			1.45	.04	T.	.76	.28	.99			.92	1.13				.32	.24	.17		.02	.20		.17	.08			.14	T.	.18		.09	7.18
Clarion ‖	Allegheny			.10	.65	.10	.15	.55	.13			.80	.35	T.			.30	.60	.15	.15		.35		.10	.75				T.	.20	.10		6.70
Claysville	Ohio			.67	.10	.02	.47	.38	1.00	T.		.79	.74				.25	.26	.18		.14	.51		.48				.08	T.	.19		.09	6.35
Confluence ‖	You'ogh'ny			.31	.45	.04	T.	.36	.95	.29		.25	1.21	.04			.27	.43	.23	.12		.39			.41			.10	.06	.38	T.		6.26
Corsopolis ‖	Ohio			.12	.20	.05	.10	.53	.86	T.		.35	.78	T.			.18	.55	.19	.22		.48		.14	.52			.06		.23	.03		5.59
Davis Island Dam ‖	do			.15	.55	.06	.06	.59	.88	T.		.36	.87	T.			.13	.55	.16	.17		.50		.14	.45			.06		.34	.01		6.03
Derry S'ation	Allegheny			.65	.04	.02	.49	.30	1.04	.01		.85	.80				.28	.21	.39		.07	.43		.51				.05		.20		.07	6.38
Ellwood City ‖	Ohio			.04	.30	.10	.06	.29	1.29	.02		.52	.81	T.			.10	.79	.17	.18	T.	.81		.11	.42				T.	.22	T.	T.	6.23
Franklin ‖	Allegheny			.02	.92	.03	.20	.33	1.36	.02		.74	.58	.02			.09	1.28	.26	.10	.06	.67		.23	.60					.06	.06		7.63
Freeport ‖	do			.30	1.10	T.	.18	.58	1.00	.03	T.	.53	.77	.01			.18	.62	.15	.45		.52		.24	.62			.19		.31	.01		7.79
Greensboro ‖	Monongahela			.56	.40	T.	.10	.70	1.60	.04		.20	1.70	.04			.24	.14	.30	.20		.48		.06	.36			.18	.02	.30	.10		7.42
Greensburg	You'ogh'ny			.80	.10	.07	.54	.29	.82	T.		.80	.91			T.	.34	.45	.13		.09	.40		.46	.05		T.		.01	.37	T.	.05	6.68
Greenville	Ohio			.76	.12	.14	.23	.59	.41	T.		1.01	.35	T.			.12	1.27	.31		.12	.60		.63				T.	.05	.10	T.	.12	6.93
Grove City	do			.47	.10	.12	.27	.31	.49	T.		.82	.71			T.	.03	1.00	.15		.08	.55		.67				T.	.02	.10	.03	.18	5.10
Herrs Island Dam ‖	Allegheny			.10	.50	.04	.04	.53	1.04	T.		.36	.90	.02			.12	.37	.13	.15		.45		.07	.47			.05		.39	.02		5.75
Indiana	do			.30	.10	.05	.07	.06	.50			1.08	.70				.34	.73	.30		.17	.47		.73	.17			.05		.50		.10	6.42
Irwin	Monongahela			.55	.04	.05	.51	.32	.80	T.		.76	.67			.18	.42	.26	T.		.13	.40		.45				.05	T.	.25		.03	5.87
Johnstown	Allegheny			1.90	.20	.08	.46	.38	.99	.01	.01	1.03	.43			.01	.40	.28	.25		.02	.53		.51	.16	.03	.02	.11	.02	.26	.04	.06	8.19
Lock No. 4 ‖	Monongahela			.40	.41	T.	.10	.55	1.10	T.		.35	1.00	T.			.14	.13	.20	T.	T.	.55		.15	.40			.05		.30	T.		5.83
Lycippus	Allegheny			.83	.23	.02	.53	.35	1.25			.95	.93			.36	.55	.21			.09	.47		.63				.05	.04	.25		.15	7.89
Mosgrove	Ohio			.01	.54	.07	.18	.57	1.13			.72	.78	.01			.13	.66	.12	.18		.24		.10	.75			.01		.25	.07		6.52
Parkers Landing ‖	Allegheny			.06	.52	.20	.18	.38	1.54	.02		.94	.84	.02			.12	.62	.16	.18		.44		.18	.56				T.	.30	.10		7.36
Pittsburgh	Ohio			.70	.03	.02	.44	.47	.40		.09	.61	.43			.02	.37	.10	.11		.38	.11		.52				.09	.22	.15		.02	5.28
Saegerstown	Allegheny			.60	.24	T.	.40	.40	.69	T.		.85	.50				.05	1.00	.80		.15	.64		.61				T.		.04		.22	7.19
Saltsburg ‖	do			.23	.71	.07	.05	.32	1.04	.01		.57	.90	.01			.17	.35	.18	.14		.48		.01	.68			.03		.36	.03		6.34
Sharon ‖	Ohio			T.	.52	.06	.03	.31	.89	.01	T.	.78	.45	T.		T.	.04	1.27	.15	.13	T.	.49		.26	.33			T.	T.	.17	.01	T.	5.90
Skidmore	do			.20	.20		.50	.25	.30			.75	.10					1.00	.10		.10	.10		.70					.10		.25	.15	4.80
Somerset	You'ogh'ny			.60	.15		.35	.51	1.05	.10		1.06	.51				.22	.20	.43			.10		.42	.28			T.	T.	.30		.10	6.38
Springdale ‖	Allegheny			.18	.34	.06		.75	1.10	.02		.47	1.02				.20	.51	.20	.25		.45		.13	.45			.04		.28			6.45
Uniontown	Monongahela			1.00		.45	.60	.44	1.14	.26	.57	.40	.61				.21	.44	.04		.07	.63		.42	.35			.03	.20			.03	7.94
Warren	Allegheny			.40	.56	.04	.06	.60	.65			.61	.35				.10	.56	.36		.58	.20		.52					.10	.10		.12	5.91
West Newton ‖	You'ogh'ny			.25	.40	.10	.13	.68	1.00	.04		.32	1.00	.02			.16	.22	.12	.10		.50		T.	.51			.06	T.	.25	T.		5.86
Maryland.																																	
Deer Park	You'ogh'ny			.06			.60	.37	.65			.93	.63				.23	.11	.25			.20		.16	.40			.25	T.	.60		.41	5.85
Grantsville	do			.40	.30		.25		.85			1.00	.35				.37	.35	.05			.10		.35	.22			.05		.40		T.	5.04
Oakland	do			.72	.10	.05	.53	.32	.42			.84	.54				.18	.10	.28			.18		.12	.38	.08		.16	.01	.36		.16	5.53
West Virginia.																																	
Bancroft ‖	G. Kanawha			.38	.05	.30		1.10	.85	T.		.10	1.75				.23	.36				.55			.60	.20		.36		.06			6.89
Beckley	do			.40			1.02	.84					.60					.20					T.	.25			.90	.10			.30	4.61
Bens Run	Ohio			.30		.10	.82	.92	1.09			1.70	1.00				.43	.35	.15		.09	.51		.53				.16	T.	.15		.18	8.48
Bluefield	G. Kanawha								1.06					.80										.70	.40	.15		.20	.20				3.51
Brandonville ‖	Monongahela			.65				.97	1.14	.30		1.10	1.13							.96				.75							.35		7.35
Buckhannon	do			.80	.20		.80	.40	.80			.44	.90				.55	.10	.25		T.	.50		.26	.54	.10		.32	T.	T.		.33	7.29
Cairo	L. Kanawha			.20	.10	.20	.60	1.10	1.15	.15		.60	2.10					.70		.42	.05	.45	.05	.25	.20			.27	.06	.12			8.77
Central Station	M'dle Is. C'k			.60	.10	.03	.82	.36	.42	T.	T.	.77	.74				.43	.13	.13		.02	.39		.08	.23			.15	T.	.10		.17	5.67
Charleston ‖	G. Kanawha			.42	.08	.28		1.20	1.34	.05		.12	.86				.03		.28			.84			.45	.38		.29	.04	.08			6.74
Cheat Bridge ‖	Monongahela																																
Cortland ‖	do																																
Creston ‖	L. Kanawha			.15	.40	.10	.10	1.30	1.12	T.		.22	1.94	.02			.41	.05	.33	.10		.60		.03	.33	.10		.32	.02	.12			7.76
Cuba	Sand Creek			.20	.05	T.	.90	.72	.84		.04	2.18	1.57				.33	.16	.15		T.	.50		.20	.15			.20	T.	.07		.16	8.42
Davis ‖	Monongahela			.39	.90	.08		.84	.83	.31		.17	.87				.68	.10	.04	.23		.34		.03	.67	.20		.05	.10	.40			7.23
Doane	Big Sandy			.32	.35	.22	.71	1.86	.71			.67						.24	.34				.60	1.09		.23		.46				.32	8.12
Elizabeth ‖	L. Kanawha			.30	.22	.13		1.00	1.20			.64	2.74				.25		.28		.02	.53	.02	.27				.23		.04			7.87
Elkhorn	Big Sandy		.10	.67			T.	.80	.18		.38	.58	T.			T.		.12	.30		.65			.85	.45		.43	.50	T.			.40	6.41
Elkins	Monongahela			.93	.01	.04	.54	.32	.54		.05	.02	.79			T.	.40	.07	.02		.18	.31		.15	.34	T.		.24	.05	.05		.25	5.30
Fairmont ‖	do			.77	.38	.02	T.	.35	1.11	.02		.41	2.06	T.			.25	.10	.26	.07		.46		.01	.36	.02		.10	.02	.21	.01		6.99
Glenville ‖	L. Kanawha			.70	.05			1.48	.90			.04	1.60	.05			.40	.05	.08	.30		.38			.42		.64	.70		.10			7.89
Grafton	Monongahela			.75	.20	.12	.80	.50	.70			2.10	1.05				.47	.17	.12			.06	.39	.10	.30	.15				.10	.16		.18	8.42
Green Sulphur Spgs	G. Kanawha			.35			.05	.49	.32			.02	.23					T.	.23			.25		.23	.32			.83				.22	3.54
Hinton ‖	do			.34	.10			.50	.20	.20			.26				.10		.18	.02		.18			.50	.10		.62	.26	.02			3.58
Holcomb	do			.60			*	*	2.18				.54						.25			.51		*	*	1.09		1.19		.05			6.41
Huntington ‖	Ohio			.70	.06			1.32	1.10			.14	1.68				.12		.36			.62		T.	.32	.12		.34		.04		T.	6.92
Lewisburg	G. Kanawha		.28	.50				.48	.35				.23					T.	.24					T.	.32			.87		T.		.20	3.47
Logan	Guyandotte			.75		.14	.12	.66	*	*	*	*	*	*	*	*	*	*	3.08			.47			.22	.86		.42				.30	7.02
Lost Creek	Monongahela			.65	.05	.20	1.08	.88	.97		T.	1.65	.58				.43	.05	.12	T.	T.	.26		.08	.12			.16	T.	T.		.40	7.68
Madison	G. Kanawha																																
Mannington	Monongahela			.93	.10	.02	.91	.44	1.20			1.57	1.18				.30	.23	.20		.06	.44		.28	.17			.15	.03	.26		.11	8.58
Marlinton	G. Kanawha			.50				.90	.50				.60						.30		.02			.35	.30			.35		.20		.40	4.42
Morgantown	Monongahela			1.30			.60	.42	.92			1.10	1.31				.32	.24				.60		.25	.20			.13	.02	.12		.17	7.70
Moundsville	Ohio			.45	T.	T.	.78	.42	1.16		T.	.69	.71				.20	.24	.27		.08	.38		.50	.03			.04		.13		.08	6.16
New Cumberland	do			.20	T.	T.	.75	.30	1.00		T.	.60	.30			T.	T.	.20	.10		.10	.10		.90				T.	.10	.30		.10	6.05
New Martinsville	do				.67		.70	.73	1.42			.66	.82				.42	.29	.13		.13	.32		.41	.27					.28		.14	7.39
Nuttallburg	G. Kanawha			.60				1.20	.80				.60										T.	.10	.70			.30					4.30
Osceola ‖	Monongahela			.06	.60			.65	.88	.35		.06	.50	.04			.13		.11	.17		.25			.43	.10		.20	.15	.30			4.98
Parkersburg	Ohio			.41	.04	.03	.79	.82	.68		.10	2.80	.28			.49	.17	.24	.01		.34	.06		.65				.08	.04	.05		.14	8.22
Parsons	Monongahela			.60			.25	.75	.75			.38	.90				.10	.25	.20			.10		.35	.30	.03		.30		.25		.21	5.72
Philippi	do			.94	.10	.03	.46	.53	.30	.03		1.17	.80				.30	.20	.26		.03	.28	.15	.10	.30	.05		.30	.15	.37		.50	7.35
Pickens	do			1.00			.36	1.65	1.08		.11	.14	1.14				T.	.16	.27			.17		.43	.85	.18		.36				.77	8.67
Point Pleasant ‖	Ohio			.36	.22	.10		1.26	1.06			.30	2.96				.40	.04	.26		T.	.60		.04	.24			.24	.04	.06			8.18
Powellton	G. Kanawha			.33		.03	.62	.77	.83	.04			.61				.04	.12	.24			.61		.14	.38	.15	T.	.60				.30	5.81
Princeton	do		.60	.40			.15	.30	.75			1.25						.20	.40		.50			1.00	.50		1.10	.60				.25	8.00
Robertsburg ‖	do			.30	.10	.05	T.	1.38	.90	T.		.16	1.85				.25		.35			.45			.20	.05		.30		.07		T.	6.41
Rowlesburg ‖	Monongahela			.80	.67	.02	.10	.80	1.34	.26		.35	1.50	.24			.40	.12	.24	.12		.54			.50	.20		.12	.12	.24			8.68
Ryan	G. Kanawha			.40	T.		.80	.60	.65		.06	.16	1.40				.21	.15	.21			.55		.16	.16	.24		.30	T.	.03		.18	6.26
St. Marys ‖	Ohio			.05	.17	.05	.08	1.09	1.76		.35	2.55					.47	.14	.37		.03	.55		.03	.45			.12		.13			8.39

TABLE 2.—*Daily precipitation for January, 1913. District No. 3*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***West Virginia*—Continued.**																																	
Smithfield‖	Fish'g Cr'k.			.52	.40	.05	.29	.72	1.25	.10	.25	1.10	2.10	T.		.35	.47	.21	.39	.15	.40	.10	.15	.64			.27	T.	.20	.25	.17	10.53
Spencer‖	L. Kanawha			.16	.35	.21	1.04	.80			.22	1.31				.28	T.	.29	T.		.37			.66	.15		.26			T.		6.10
Sutton	G. Kanawha			.36	.40		.96	1.04	T.															.55							
Terra Alta	Monongahela																															
Union	G. Kanawha			.10			.98	.33	.15							.30	.45				.20			.35	.31	.30		.31	.20	.40		4.38
Valley Fork	do.																															
Webster Springs	do.																															
Wellsburg	Ohio			.46	.10		.40	.45	.88		T.	.90	.64			T.	.29	.32	.08		.04	.37		.60					.05	.30		.05	5.93
Weston‖	Monongahela			.90	.28			.88	.80			.06	1.20				.50	.04	.30	.18		.56			.36		.24	.34		.16			6.80
Wheeling‖	Ohio			.12	.62	.03	.02	.60	1.37	.09		.32	1.32	.01			.20	.22	.30	.10	.02	.54		.07	.50			.05		.20	.03		6.73
Williamson‖	Big Sandy			.12	.20	.20		.98	2.14	.06		T.	.74	.02			.04		.58	.04		.76			.44	.34		.52	.22				7.40
Ohio.																																	
Amesville	Ohio			.30	.07	.09	.82	.88	1.22		.05	.91	.68	T.		T.	.62	.20	.13		.09	.42		.85	.27			.02	T.	.14		.16	7.02
Bangorville	Muskingum.		.08	.65	.10	.10	.31	1.11	.67		.21	1.42	.25			.20	.80	1.10	.10		.68			1.02				.06	.40	.20	.10	.44	10.00
Bellefontaine	Great Miami		.06	1.23	.32	.06	.16	1.04	.12		.19	.10	.03			.03	.21	.19	.11		.46	.09		.13					.46				4.99
Bladensburg	Muskingum.			.20	.20	T.	.42	.46	.58	T.	.16	.76	.36			.06	.30	.69	.06		.11	.42		1.16					.30	.25		.52	7.01
Brilliant	Ohio			.30		T.	.60	.40	T.	.70		T.	.20	T.	.40	T.			.38			.47		.65			T.					.40	4.50
Cadiz	do.			1.10	.05	T.	.64	.86	.06	.01	.08	1.20	.30			.03	.74	.27	.23		.10	.25		.69				.05	.07			.42	7.15
Cambridge	Muskingum.			.18		.08	.96	.51	1.09			.98	.70			.04	.49	.61	.23		.12	.36		.82					T.	.25		.18	7.54
Camp Dennison	Ohio		T.	.42	T.	.15	.62	.84	.81		.05	1.83	.80			.46	.85	.78	T.		.20	.20		.83					T.	.10		.25	9.28
Canal Dover	Muskingum.			.40	.10	T.	.12	.35	1.20		.10	.43	.68				.16	.82	.15		.12	.10		1.05				T.	.20	.40		.20	6.58
Canton	do.			.37	.10	.05	.23	.60	.18		.25	.55	.40			.01	1.05	.74	.10		.50	.10		.83				.01	.35	.20		.22	6.84
Cardington	Scioto.		.10			.03	.47	1.05			.04	.67	.13			.32	1.01	.45	.61		.73	.09		.53					.55			.05	6.83
Chillicothe ‖	do.			.05			.14	1.60	1.27			.52	.93				.50	.28	.18		.05		.50		.56	.10						.43	7.11
Cincinnati	Ohio.		.46	.19		.14	.56	1.52	.04		.70	1.78	.05			.56	.61	.59	.03		.65		.01	.78					.08			.27	9.02
Circleville	Scioto.			.21	T.	T.	.70	.84	.86		.14	1.20	.72			.15	.59	.31	.12		.25	.61		.74					.05			.24	7.73
Clarington	Ohio			.30	.35	T.	.60	.60	1.25	.05		.80	.95				.35	.25	.25		.10	.45		.55	.42			.12	.05	.20		.15	7.79
Columbus	Scioto.		.07	.21	.08	.06	.13	1.15	.05		.36	.82	.22			.15	.70	.29	.05		.71		.01	.97					.32	T.		.28	6.63
Coshocton ‖	Muskingum.			.26	.18		.14	.46	1.06	.02		.48	.88				.45	1.01	.14	.15	.11	.68		.62	.40					.36		.12	7.52
Dayton (1)	Great Miami.		.61	.12	.04	.09	.22	1.02	.02		.38	.62	.05		..	.25	.67	.33	.04		.88		.05	.91				.17				.19	6.66
Dayton (2)	do.		.30	.52	.07	.05	.23	.78	.33		.18	.80	.30			.26	.52	.62	.08		.90	.05		.99				.15	.06			.24	7.43
Delaware	Scioto.		.40	.10	T.	.15	.45	.30	T.		.80	.38			T.	.12	1.30	.08		.02	.71		1.33		T.			.01	.50		.28	6.93
Demos	Ohio			.60	.04		.05	.79	.75	.92	.10	.91	.71			T.	.41	.46	.26		.14	.42		.60				.04	.08	.21		.08	7.57
Dennison	Muskingum.			.35	.35	.25	.21	.39	1.12		.04	.72	.63			.07	.15	.96	.07		.06	.83		.84					.04	.31		.22	7.61
Frankfort	Scioto.			.25		.05	.65	.85	.70		T.	1.20	.70		.05	.75	.22	.10	.10		.15	.40	.02	.90					.10			.25	7.44
Gallipolis ‖	Ohio			.43	.07	.09	.08	1.17	.94			.40	2.40				.34	T.	.21			.57		.03	.23			.22		.04			7.22
Garrettsville	Mahoning.			.33	.03	.05	.16	.35	.85		T.	.99	.43			T.	.06	1.21	.36		.04	.74		.48				T.	.06	.12	.05	.12	6.43
Granville	Muskingum.			.30	.10	.04	.30	.60	.90		.07	1.05	.40			.07	.74	.51	.12		.40	.30		.85					.30	.20		.38	7.63
Gratiot	do.			.40	.05	.05	.40	.60	.80		.05	1.11	.61			.02	.60	.47	.27		.30	.58	T.	.99					.20	.20		.40	8.10
Green	Ohio			.30		.45	1.10	1.20	1.00			2.40	.70			T.	.28	.50			T.			.62				T.	.17			T.	8.72
Green Hill	Muskingum.		T.	.23	.08	.04	.15	.55	.64		.02	.80	.38			.03	.41	.60	.11		.28	.20		.60				T.	.13	.19		.20	5.64
Greenville	Great Miami.			.54		.47	.51	1.78			.70	.50	.28			.05	.57	.38	.02		1.26			.63					.25	.04		.18	8.16
Hamilton ‖	do.			.46		.34	.32		1.15			1.43	.44				.72	1.06	.07			.64		.92	.09							.18	7.82
Haydenville	Ohio.			.32	.05		.84	1.52	.61	.33	.63	.51			.02		.49	.35	.04		.61			.43						.18	.05	.27	7.25
Hillsboro	Scioto.																															
Ironton	Ohio			.34			.92	.91	.52		.07	.87	1.37			T.	.26	.30	.02		.01	.44		.42	.10			.24				.25	7.04
Kenton	Scioto.		.04	.40	.10	.05	.15	.80	.40		.07	.93	.22			T.	.40	.58	T.		.61	.17		.51					.20			.04	5.67
Killbuck	Muskingum.		T.	.26	.05	.10	.25	.70	.65	T.		.93	.53			.20	.35	1.60	.10		.60	.05		1.00					.26	.30	T.	.40	8.33
Kings Mills ‖	Little Miami.			.64	.03	T.	.32	.73	1.02			1.14	1.46				.84	1.25	.33		.04	.84		.79	.07					.13			.21	9.84
Lancaster	Ohio			.70		.10	1.00	.70	.63	T.	.10	1.05	.78			.15	.60	.62	.20	T.	.50	.42		.75					.10	.30		.35	9.05
McConnellsville	Muskingum.			.35	.20		.68	1.41	.54		.11	.76	.55			.11	.24	.54			.30	.41		.72				T.	.12	.10	.19	.02	7.35
Marietta	Ohio			.35	.05		.87	1.03	1.06		.02	1.30	.64				.50	.21	.02		.05	.51		.50	.04			.06	.04	.08		.12	7.45
Marion	Scioto.			1.85	.18	.06	.15	1.41	.67			1.88	.40				1.18	.61	.06		1.30			.48					.32	.15		.10	10.80
Milfordton	Muskingum.		T.	.50	.29	T.	.15	.50	.03		.04	.80	T.			.20	.35	1.03	.07		.10	.59		.75					.30	.50		.30	6.50
Milligan	do.			.50	.10	T.	.60	.89	.69		T.	1.17	.66			.05	.67	.72	.28		.28	.28		.98					.03	.21		.17	8.28
Millport	Ohio.			.21	.09	T.	.21	.31	.81			.63	.51			.07	.23	.71	.09		.14	.12		.48					.09	.14	.03	.18	5.05
Nellie	Muskingum.			.15	.05	.30	.25	.50	1.02		.05	.90	.75			.20	.25	1.05	.10		.10	.35		1.25					.25	.15		.20	7.87
New Berlin	do.			.20	.20	.10	.30	.70	.55		.05	.75	.35			T.	.50	1.05	.20		.28	.50		.90					.12	.25		.15	7.15
New Waterford	Ohio.			.40	.20	.20			1.63				1.16					1.00	.18			.48			.53				.20	.27		.18	6.43
O. S. University	Scioto.			.31		T.	.30	.95	.49		.17	.77	.45			.10	.73	.49	.15		.55	.32		1.05	.02				.19	.06		.25	7.35
Oregonia ‖	Little Miami.																															
Pataskala	Muskingum.			.33	.03	.08	.28	.66	.93		.06	.95	.52			.08	.67	.52	.15		.35	.31		.76					.18	.20		.35	7.41
Peebles	Ohio			.23	.01	.14	1.01	1.13	1.35		.02	1.75	.62			.02	.61	.25			.14	.62		1.11	.07			.03	.03	.11		.71	9.96
Philo (1)	Muskingum.			.18	.03	T.	.88	.57	.92		.08	1.08	.63			.06	.53	.72	.38		.07	.41		.74					.05	.12		.27	7.72
Piqua ‖	Great Miami.			.42	.14	.06	1.00	.55	1.08	.02		1.02	.53				.07	1.04				.87		.56						.47			7.83
Plattsburg	do.		T.	.40	.20	.12	.13	.45	.58		.10	.78	.60			.23	.42	.57	.05		.35	.10		1.24					.30	.30		.22	7.14
Portsmouth ‖	Ohio.				.28	.17	.31	1.72	1.05	.04		1.27	2.20				.26	.11	.31			.55		.39	.29			T.		.04			8.99
Prospect ‖	Scioto.		T.		.30		.40	.60	2.75			.65	.90			.55	1.20	.40				.80		.30				.40					9.25
Sidney	Great Miami.		.03	.54	.15	.29	.53	1.57	.15		.18	.93	.28			.05	.43	.73	.07		.97	.17		.33					.26	.01		.14	7.81
Somerset	Muskingum.			.46	.17	T.	.75	.60	.56		.16	.80	.44			T.	.56	.60	.18		.20	.59		.60					T.	.35	T.	.20	7.22
Springfield	Great Miami.		.08	.66	.06	.06	.15	.72	.36		.15	.81	.20			.11	.64	.66	.02		.70	.15		1.08					.12	.16		.18	7.07
Summerfield	Ohio.			.42	.07	.02	.69	.84	1.08		.01	.94	.77	..		.01	.51	.56	.31		.12	.58		.68				.07	T.	.21		.16	8.05
Syracuse	do.			.41		.16	.71	.92			.02	2.54	.83	..			.37	.10	.11			.65		.31	.01			.02	.01	.10		.30	7.57
Thurman	do.			.30			1.00	.70	.78		T.	2.00	.55					.47				T.		.80	.10						.23	6.93
Toboso	Muskingum.		.17	.22	.03	.12	.62	1.72	T.	T.	.57	.97				.20	.70	.17	.16	.15	.59		.77	.11					.25	.20	.10	T.	7.82
Urbana	Great Miami.		.25	.70	.08	.15	.45	.80	.22		.12	.98	.30			.16	.60	.88			.86	.22		.87					.32	.08		.25	8.29
Warren	Mahoning.																															6.44
Waverly	Scioto.			.25	.03	.18	.75	.68	.50		.05	.65	.38			.02	.65	.26			T.	.25		.97				T.	.05	.10		.26	6.03
Waynesville	Little Miami.		T.	.60	.05	.10	.30	.88	.40		.15	1.20	.60	..		.25	.77	.55			.63	.18		.88					.07	.02		.25	7.88
Wooster	Muskingum.			.50	.20	.20	.10	.86	.52		.09	.83	.40			.02	.62	.75	.23		.80	.07		.80					.60	.02		.25	7.86
Youngstown ‖	Mahoning.			T.	.20	.08	.04	.20	.95	T.		.61	.42	T.			.03	.99		.10	.06	.40		.30	.25				T.	.25	.05	.03	4.96
Zanesville ‖	Muskingum.			.21	.10	T.	.23	.95	1.28	T.		.41	1.37	T.			.24	.50	.34	.11	T.	.57		.43	.32					.23		.03	7.32
Indiana.																																	
Anderson	W. F., White		.50	.21	.03	.20	.63	1.31	.01		.13	.25	T.			.07	.10	.85	T.		1.26	.02		.70					.15	T.		.14	6.56
Attica ‖	Wabash		.05	T.	.01	.05	1.35	.35	.31	T.		.42	.22			.05	T.	.67	.50		1.22	.79		.72					.21	.20		.21	7.33
Bloomington ‖	W. F., White			.35	T.	.12	1.12	.54	.72	.04		1.03	.51				.52	2.52	.10			1.30		1.48	.04					.14		.29	10.82
Bluffton ‖	Wabash			.16	.02	.05	.85		1.12			.72		.37	T.		.04	.78	.40		.17	1.40		.56	.02				.05	.17			6.88
Butlerville	E. F., White		.45	.60		.18	.41	1.70	.15		.35	1.92	.34			.49	1.12	1.41	.11		.85	.14		1.31					.28			.31	12.12
Cambridge City ‖	Whitewater.			.40			.78	.79	1.08			.94	.40				.27	1.05	.03			1.10		1.02						.30		.14	8.30
Columbus ‖	E. F., White																															
Connersville	Whitewater.		T.	.57		.30	.30	1.07	.36		.19	1.08	.20			.21	.55	.80			.82			1.00					.25				7.70
Crawfordsville	Wabash		T.	T.	T.	T.	1.10	1.05	T.		.40	.48				.30	.30	.80			1.30			.85					.20				6.78
Delphi ‖	do.			T.	.02	.19	1.35	.40	.30	.02		.47	.25			T.	.02	.41	.77		1.10	.93		.59					.02	.19		.45	7.48
Eminence	W. F., White		.05	T.		.20	1.00	1.52	.05		.10	.90	.20			.25	.50	.52			.80	T.		1.30					T.				7.39
Evansville	Ohio.		.42			.43	1.27	1.49	.01		1.32	1.94	T.			.03	.20	.57	.03	T.	.66		.46	.81					.05		.55	.03	10.27
Farmersburg	Wabash		.11			.32	.70	1.40			.09	.92	.07			.23	.33	.40			1.12			.93					.07		T.	.42	7.10
Farmland ‖	W. F., White			.60	.02	.13	.75	.53	1.20			.75	.40				.15	.90	.05			.90		.85	.10					.15		.22	7.71

TABLE 2.—*Daily precipitation for January, 1913. District No. 3*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Indiana—Contd.																																	
Forest Reserve	Ohio		.34	.61		.34	.91	1.25	.49		.22	2.12	.53			.15	.94	.55	.09		.75	.07		.80					.04	.01		.14	10.35
French Lick ‖	E. F., White			.46	T.	.08	.78	.75	1.18	T.		1.72	.96				.68	1.56	.16			.84		1.28	.16					.11		.47	11.19
Greenfield	do		T.	.30	T.	.20	.53	1.35	.05		.07	.70	.26			.13	.50	.60			.73	T.		.79				.15				.31	6.67
Greensburg	do		.06	.60		.02	.85		.65	.02	.12	.15	T.			.03	.51	.56	.25		.95			.74				T.				.34	5.85
Hickory Hill	W. F., White		.05	.37		.36	.68	1.07	.05		.27	.79	.38			.40	1.15	.80	.04		1.25	.03		1.05				.17					8.91
Huntingburg	Wabash		.28	.13		.13	1.15	1.55	.33		.43	2.57	.44			.13	.90	.82	.05		.88		1.47					.19				.54	11.99
Huntington	do		.05	T.	.10	.16	.42	.90	T.		.35	.50	.13			.03	.22	.20	.90		1.50			.47				.23				.15	6.31
Indianapolis	W. F., White		.07	T.	.01	.30	.85	1.58	.01		.50	.57	T.			.17	.82	.22			1.26		.18	.56				.19	T.	.18		.16	7.63
Jeffersonville	Ohio		.60	.18		.32	1.40	2.31	.22		1.02	2.23	.12			.12	.33	.42	.03		.43	T.	.02	1.11	T.			T.				.25	11.11
Judyville	Wabash			T.	.08	.10	.30		.02		.12	.10	.04			.05	.50				1.20	.30		.55					.25			.10	3.71
Kokomo	do		T.	.02		.23	.59	1.34	T.	.11	.09	.85	.12			T.	.38	.43	.33		1.50	.10		.57					.13			.15	6.94
Lafayette ‖	do		T.	T.	.11	.20	1.04	.68	.04		.10	.37	.18			.03	.20	.34	.36	T.	1.85	T.		.67				.24	T.			.35	6.76
Logansport ‖	Wabash			T.	.02	.13	.60	.50	.30			.31	.18			.03	.04	.42	1.60		1.00	.78		.60				.11	.10			.40	7.12
Madison	Ohio		.10	.64		.29	.90	1.01	.68		.29	1.94	.72			.18	1.13	.59	.11		.72	.30		.81				.05				.33	10.79
Marengo	do																																
Marion ‖	Wabash		.15	T.	.40	.12	.71	1.08	T.		.11	.86	.18			.04	.33	.37	.25		1.75	.12		.55				.30	T.		.19		7.51
Mauzy	E. F. White		.16	.60	T.	.29	.45	1.30	.08		.17	.94	.20			.22	.57	.66			1.16	T.		.91				.30	T.		.23		8.24
Monticello ‖	Wabash			T.	T.	.25	1.00	.40	T.	.25		.40	.50				T.	.31	1.45		.64	.52		.57				T.	.21				6.50
Moores Hill	Ohio			.40	T.	.25	.37	1.30	.43		.14	1.60	.47			.35	.88	.90	.08	T.	.44	.15		1.09				.03	.03		.15		9.06
Mount Vernon ‖	do			.22		.04	1.20	1.26	.86	T.		1.90	1.14				.10	.82	.18		T.	.50		1.10	.04			T.	.10		.34		9.80
Nashville	E. F. White			.50		.22	.63	1.17	.07	T.	.15	.99	T.	T.		.09	2.03	.81			1.23			1.48				.14			T.		9.51
Paoli	do		.38	.28		.20	.68	1.46	.24		.21	2.27	.32			.29	1.19	.57			.63	.05		1.26				.11			.45		10.59
Princeton	Wabash		.20			.27	1.00	1.26	.02		.63	1.92				.22	.88	.69			.75		.12	1.35							.58		9.89
Richmond	Whitewater		.57	.01	.03	.27	.31	1.55			.65	.70	T.			.17	.92	.24			1.12		.14	.55				.25	T.	.01	.15		7.64
Rochester	Wabash				.20	.25	1.00	.25			.02		T.			.05	.04	.39	1.20		1.11			.64			T.					.52	5.67
Rockville	do		.15	T.	T.	.19	.98	.79	T.		.15	.72	.01			.11	.31	.70	T.		1.60	T.		.70				.01				.31	6.73
Rome	Ohio		.35	.62		.15	1.45	1.40	.73		.56	3.50	.49			.05	.18	.51	.04		.59	.19	T.	1.14		T.		.03				.22	12.20
Salamonia	Wabash		.01	1.05	.15	.85	.55	1.26			.21	.87	.22			.07	.33	.67	.02		1.05	.12		.68				.52				.30	8.93
Salem	Ohio		.40	.30		.30	.95	1.95	.34		.30	1.85	.40			.25	1.00	.80	.05		.87	.10		1.08				.10	.01			.45	11.50
Scottsburg	E. F., White		.29	.40		T.	.56	2.21	.41		.40	1.85	.52			.27	1.09	.61	.08		.87	T.		.88				.05				.29	10.78
Seymour	do		.20	.15		.24	.60	1.57	T.		.15	1.65				.65	.78	1.12	.06		.89			1.23				.16				.25	9.70
Shelbyville	do		.21	.31		.30	.41	1.34	.05		.15	1.06	.07			.48	.64	1.12			1.13			.80				.23				.18	8.48
Shoals ‖	do			.66	T.	T.	.91	.70	.83			1.30	.83				.37	1.43	.10			.75		1.23	.05				.11			.37	9.64
Terre Haute	Wabash		.06	T.	.01	.16	.73	1.06	.02		.57	.30	T.			.18	.85	.13		T.	2.30		.31	.50				.05		.48	T.		7.71
Veedersburg	do			T.	.05	.10	.90	.75	.05		.05	.52	.05			.18	.16	.40	.33		1.90	T.	.50					.20				.27	6.41
Vevay	Ohio		.05	T.	T.	.25	1.30	1.00	.90		.50	2.25	1.00			.15	1.45	.50			.80			1.00				T.				.40	11.55
Vincennes ‖	Wabash			.10		.15	.65	.60	.75	T.	.20	1.30	.50			T.	.90	2.00	.05		T.	1.65		1.60	.10				.10			.70	11.35
Washington	W. F., White	.07	T.			.42	.72	1.08			.70	1.48	.22			.30	1.15	.86			1.61			1.61				.19				.40	10.81
Whitestown ‖	do			.12	T.	.04	.90	.57	.72			.59	.49	T.			.09	1.11	.04		.02	1.69		.66	.01				.10			.42	7.57
Winona Lake	Wabash			T.	.03	.03	.84	.70	.08		.03	.42	.03			.03	.14	.29	.97		1.18	.01		.43			T.	.20	T.	T.	.40	5.81
Worthington	W. F., White		.50			.30	.60	.92	.05		.17	.98	.17			.37	.85	.72			1.05	T.		1.07				.15			.50	8.40
Illinois.																																	
Albion	Wabash		10			.25	.64	.98	T.		.59	1.35	T.			.30	.94	.86			1.42	T.	.17	1.25				.13		T.	.39		9.37
Casey	do		T.			1.08	T.	1.02			.38	.44				.18	.52	.12			2.05			.76				.10		T.	.33		6.98
Charleston ‡	do																																4.93
Danville	do			T.	.08	.22	.94	.72	0.2		.08	.42	.09			.09	.32	.50	.37		2.10	.02		.93				.15			.12		7.17
Equality	Ohio		.26			.47	1.05	.46			.78	2.30	1.38			.10	.10	.62		.02	.96		.03	.90				.07			.39		9.89
Fairfield	Wabash		.18			.15	.91	1.14	T.		.48	1.48				.46	.69	.97			1.53	T.	.12	1.50				.15			.42		10.18
Flora	do		.09			.10	.73	1.11	T.		.38	1.01	T.			.54	.74	.41		T.	1.36	T.	T.	.96				.07		T.	.32		7.82
Golconda	Ohio		.31			T.	2.38	1.66	.08		1.15	2.58	.42					.89			1.15		T.	1.38				T.			.66		12.66
Hoopeston	Wabash			.02	.10	.14	1.15	.55	.02		.12	.32	.10			.05	.07	.33	1.07		1.15			.62				.25			.15		6.21
McLeansboro	Ohio		.17			.13	1.28	1.12	T.		.70	1.70				.34	.52	.52	.04		1.12		.11	1.29				.10			.41		9.55
Metropolis	do		.30			T.	2.07	1.85			1.35	3.15						1.11			1.32		T.								.68		11.83
Montrose	Wabash		T.			.06	1.21	.85	T.		.21	.56	T.			.19	.42	.27			1.44		T.	.90				.07		T.	.13		6.31
Mount Carmel ‖	do			.14		.04	.90	.70	.36	T.		1.84	.40			.02	.58	1.14	.02			1.26		1.54	.06			T.	.26		.50		9.76
New Burnside	Ohio		.08	T.		.07	1.45	1.27	T.		.45	2.38	.25			.10	.03	.83	.06		.84	T.	.07	1.05				T.			.40		9.33
Newton	Wabash		.12			.11	.60	1.08	T.		.19	.75	.02			.28	.39	.39			1.29	T.		.97				.05			.32		6.56
Olney ‖	do		.11				1.20	.82	.52	T.		1.33	.30			.10	.67	1.00			.42	.82		1.20							.37		9.01
Palestine	do		.08	T.	T.	.21		.96	.03		.33	.91	.24			.36	.41	.60	.02		1.06	T.		1.09				.13			.60		7.02
Paris ‖	do			T.	T.		1.65	T.	.48			.80	.30			T.	.17	.70	.27		.15	1.50		.80				.05	T.		.55		7.42
Philo	do				.07	.22	1.17	.67	T.		.22	.24	.04			.18	.75	.14	.19		1.74		.07	.81				.09		.04	.05		6.69
Rantoul	do			T.	.09	10	.70	.36	.02		.08	.36	.07			.05	.71	.30	.73		1.05			.71				.10			.05		5.48
Rileyville	Ohio		.14			T.	1.38	1.63			1.00	1.99				.21	.25	.48	.06		.69		.09	1.08				.01		T.	.44		9.45
Shawneetown ‖	do			.35		.08	1.65	1.07	.83			2.00	1.26				.20	.45	.32		T.	.75		1.20					.07		1.12		11.35
Tuscola	Wabash		T.	T.	T.	.18	1.34	.79	T.		.08	.38	.04			.14	.25	.42	.30		1.85			.76				.17		T.	.05		6.75
Urbana	do			T.	.08	.08	.98	.42	T.		T.	.04				.18	.87	.06	.37	T.	1.19		.09	.77				.13		.12	T.		5.45
Kentucky.																																	
Alpha	Cumberland		.45	.20			3.15	1.75	T.		T.	1.45	T.					.90			.80	T.		1.10	.55		.51	.20				.70	11.76
Anchorage	Ohio		.35	.21		.40	1.29	1.67	.60		.53	2.72	.32			.06	.30	.38			.59	T.	T.	1.12				T.			.30		10.84
Bardstown ‖	Salt			.33	.10	.47	1.10	2.10	1.80			2.70	2.10				T.	.37	.18		.14	.78		1.12	.35	T.					.35		13.90
Beattyville ‖	Kentucky			.24	.34		.12	2.58	1.94	.14	T.		1.38				T.		.70			.48		.12	.72	.42		.68			.38		10.24
Beaver Dam ‖	Green			1.60		.02	1.60	1.15	1.10			2.60	3.15					.25	.40			.80		.70	.26						.22		13.85
Berea	Kentucky					.38	2.20	2.52	.83		.82	.78	.02								.02		T.	.85	.67			.37			.38		9.84
Blandville	Mississippi		.35			T.	2.35	1.53			1.35	2.61				T.	T.	.85			1.43		.04	1.12				T.		.07	.77		12.47
Bowling Green ‖	Green			.50		.10	.25	3.40	1.90			.21	2.80					.03	.55			1.00		T.	1.55			.05	T.		.40		9.20
Burnside ‖	Cumberland			.30	T.	.08		2.70	1.34			.14	1.00	T.					.75	T.		.84			.64	.47		.47	.07	T.	.42		12.76
Calhoun	Green		.47	.15		.06	2.05	1.01	.66		.87	3.62	.56				T.	.66	.04	T.	1.20	.06	T.	.90					.03		.36		12.70
Catlettsburg ‖	Big Sandy			.58	.12	.18		1.38	1.10	.12		.12	2.00				16	.02	.34	T.		.56		.02	.34	.12		.26		.12		.02	7.56
Earlington ‖	Green			.70			1.47	1.05				3.50	2.50					.35	.48			1.10		.66	.16							11.97
Edmonton	do			.31		.18	2.65	4.87	.87		.16	T.	1.50	.19				.39	.30			.81		.71	.76			.40	.01	.01		.65	14.77
Eubank ‖	Cumberland			.25	.03	.04	.06	5.30	2.00			.09	1.20						.50			.52		.02	.45	.22		.38				.36	11.42
Falmouth ‖	Licking			.30	.06	.28	.35	1.70	1.55	T.		1.24	1.46				.33	.58	.16			.53		.73	.20					.12		.32	9.91
Farmers	do																																
Frankfort ‖	Kentucky			.24	.02	.13	.45	1.76	1.65	T.		2.37	2.57				.03	.15	.21		.10	.42		1.21	.12					.02		.35	11.80
Franklin	Green			.72		.11	1.83	5.80			.13		1.83		T.			1.11			1.04			.75	.61			24	T.			.64	14.81
Greensburg ‖	do			.34	T.	.25	.40	3.10	.20			.28	1.90				.50		.72			.88		.60	1.35	.12		.27	.81			.60	12.32
High Bridge ‖	Kentucky			.30	.05	.17	.22	1.85	1.90			.29	3.24	T.				.06	.32			.66		.05	.78			.10		.03		.49	10.51
Hopkinsville	Cumberland		.60	.25		.05	2.15	21.5	.70		.35	4.00	.90					.90			1.20			.90	.08							.30	14.53
Irvington	Ohio		.40	.29		.30	1.50	2.25	.62		2.25	3.01	.40			T.	.24	.58	.15		.82			1.22				T.				.30	14.33
Leitchfield	Green		*	.70		*	1.67	3.00			*	4.80						.53			.95			1.25								.36	13.26
Lexington	Kentucky		.10	.26	.01	.07	1.13	2.39	.19		.17	3.50	.06			.01	T.	.46	.02		.53	.01		.94	.01			.03	.03			.43	10.35
Loretto	Salt			.35		.11	1.58	2.25	.93		.22	1.94						.55			T.	.80		1.11	T.				T.			.45	10.29
Louisa ‖	Big Sandy			.26	.20	T.		1.60	1.40			.20	1.29				.03		.37			.40	.06		.67	.36	.33					.18	7.35
Louisville (1)	Ohio		.69	T.	T.	.27	1.08	1.99	T.		1.37	1.90				.07	.21	.38	.02		.37		.02	1.25				T.		.01	.28		9.91
Louisville (2)	do			.46		.36	1.31	1.51	.80			3.10	.69			.06	.33	.37	.02		T.	.35		1.03				.02				.25	10.66
Marion	do		.40	.22		T.	2.36	1.48			2.00	2.69	.44					1.01		T.	1.58		T.	1.09				T.					13.27

TABLE 2.—*Daily precipitation for January, 1913. District No. 3*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***Kentucky*—Contd.**																																	
Maysville ||	Ohio			.33	.04	.15	.05	1.64	2.25	.05		.95	2.22				.26	.17	.28	T.	.06	.65		.55	1.06			.03		.12		.33	11.19
Middlesboro	Cumberland			.35	.35		.95	2.40	.62		.05		.93					.35	.84				.80	.43	.75	.12		1.13				.54	10.61
Mount Sterling ||	Licking			.12	T.	.48	T.	2.10	1.98	T.		.22	2.28		T.		.03	T.	.38		T.	.81		T.	.92		.24		T.			.22	9.78
Owensboro ||	Ohio			.20			2.08	1.10	.80			2.45	1.10					.25	.15			.97		.74	.50					T.		.55	10.89
Paducah ||	do			.46			1.86	1.50	.78		T.	3.30	1.56					.36	.50		.06	1.30		1.64							1.36		14.68
Pikeville ||	Big Sandy			.35	.05			.80	.90	T.		.12	.50	T.			T.		.42			.62			.25	.30		.50	.20				5.01
Richmond ||	Kentucky			.20	T.	.45	.80	2.26	1.73	.02		.36	1.85				.02		.54			.82		.25	.97	.10		.28		.03		.35	11.03
St. John ||	Salt			.89		.07	.96	1.70	1.40			2.40	2.05					.18	.30		.08	.84		1.05	.45							.42	12.79
Scott	Licking		T.	.45	T.	.15	.77	1.12	.74		.15	1.90	.97			.17	1.07	.52	.02		.32	.35		1.16	T.				.03	.04		.40	10.33
Shelby City	Kentucky			.15		.18	1.75	2.42	.60		.43	.25	1.83					.38	.03			.63		1.00	.29							.95	10.89
Shelbyville ||	Salt			.60	.30	.10	.86	*	3.25	T.		*	4.60				.52	*	.70		T.	T.		1.35	.70						*	.38	13.36
Taylorsville	do		T.	.24		.21	1.23	1.92	.58		.55	4.35	.59			.14	.18	.46	.05		.44	.28		1.35					.05	.01		.32	12.95
Williamsburg ||	Cumberland			.55	.10			2.70	.70			.05	1.00						.93			.80			.63	.55		.84	.10			.30	9.25
Williamstown ||	Licking			.31	.03	.10	.35	1.69	1.50	.05		1.33	1.25				.30	.61	.23			.50		.78	.25					.12		.35	9.75
Tennessee.																																	
Ashwood	Tennessee		.45	.25			1.75	.36	.67		.05	.05	.75					.90	.16			.40		.75	.85			1.08				.35	8.82
Benton	do			1.05				.50	.53		.10		1.10						.94		.60			T.	2.10	T.		1.12				.60	8.64
Birds Bridge ||	do			.56	.02			.03	.19	.06		.03	.39	.03					.55	.10		.54	.01		.55	.88	.02	.93	.19				5.08
Bluff City ||	do			.37	.12			.08	.19	.09			.35	.09					.48	.12		.46			.30	.93		.81	.36				4.75
Byrdstown	Cumberland			1.00			2.10	.17	.98		.11		1.40					1.10				.81		.73	.51	.15		.84				.55	10.45
Carthage ||	do		.72			.03	.07	2.40	1.03			.11	1.07						1.05		.04	.90		.02	.95	.45	T.	.70	T.			.48	10.02
Cedar Hill	do		.06	.70		T.	2.00	4.70	.60		.30	1.00	1.02					.75	.18		1.00	.02		.70	.70		T.	.15	T.			.75	14.63
Celina ||	do			.48		T.	.06	3.14	1.12		T.	.08	1.32						1.01		T.	.84		T.	.91	.38		.63	.13			.42	10.52
Charleston ||	Tennessee			T.				.67	.52			.15	1.05						1.10	.05		.67	T.		.77	.84	.50	.60	.09			.20	7.21
Chattanooga	do		.53	.03			.72	.02	.33		.07	.82	.37					.53	.13		.36	.06		.62	1.03	.02	.43	.73				.33	7.13
Clarksville	Cumberland		.60	.10		.10	1.80	4.20	.61		.04	2.00	.60					1.30	.06		1.10			1.10	.26			.13	T.			.70	14.70
Clinton ||	Tennessee			.60		T.		2.00	.40			.20	.80				T.		1.30	.30		1.10			1.80	.65	T.	.86	.14			.20	10.35
Crossville	do			*	.50	T.	1.70	2.20	.60	.15	.10	T.	.78	.05				.46	.77		.02	.45	T.	.65	.92	.04	.01	.95				.44	10.79
Dandridge ||	do				.60		.16	.36	.30		.06	.50							.70			.84			.96	.94		1.10	.32				6.84
Decatur	do		.67	.03		.03	.06	2.00	.42		.37	.08	.46	.03				.04	1.18		.01	.97		.43	1.04	.04	.01	1.22				.30	9.39
Dickson	Cumberland		.51	.44		.07	3.03	3.64	.62		.18		.65					.60	.55			.73		.95	.65							1.10	13.72
Dover	do						1.98	3.35	.56		.12	3.70						.97			.98			1.17	T.							.62	13.45
Dunlap	Tennessee			1.55		.10	1.75	2.38	.58		.95	.05	.70					.28	.55			.50		.52	.40			1.22				.54	12.07
Elizabethton ||	do			.20	.30	.10				.88		.01	.47	.02				.60	.05			.40			.22	.80		.90	.40				5.35
Erasmus	Cumberland			.55		T.	2.14	1.80			.12	T.	.94					.73	.50		T.	.62		.96	.88	.05		1.12	T.			.58	10.99
Florence	do		T.	.70		3.15	1.12	.84		T.	T.		1.40					.66	.38		T.	.58		.63	.64	.23	T.	1.15				.33	11.81
Franklin	do			.66			3.21	1.19	1.06		.06		1.18					.34	.43			.66			.44	.11	1.04					.49	10.87
Halls Hill ||	do			.48			.12	3.60	.77			.10	1.37						.93			.65		1.97	.21		.95	.08			.50	11.73
Hohenwald	Tennessee		.48	.42			2.25	.91	.85		.10		1.41					.83	.47			.54		.90	.95	.12		1.30				.43	11.96
Iron City	do		.61	.43			1.80	1.55	.85				.68					1.08				1.02		.82	.90	.12		1.17		T.		.68	11.71
Jefferson City	do		.77	.40				.55	.53		.09	.02	.55						.85			.65		.02	1.73	.19		1.29				.50	8.14
Johnson City ||	do			.18	.05			.02	.24				.42						.45			.51			.35	.79		.93	.22				4.16
Johnsonville	do		.40	.03		.29	2.70	2.15	.80		.10	.34	.97					.56	.16		.42	.27		.71	1.18	.43		.20				.70	12.41
Kingston ||	do			.50		T.	T.	2.02	.50			.18	.65						1.30	T.		.90		T.	1.36	.41		1.00	.24			.28	9.34
Knoxville	do		.19	.34		T.	1.02	.42	.54		.02	.08	.52					.92	.28		.39	.49		.61	1.32	.06	.10	1.13				.50	8.93
Lebanon	Cumberland		T.	.82		T.	2.20	.59	.50		.19	T.	.60					.48	.45			.77		.80	.41	.27		.90	T.			.49	9.47
Lewisburg	Tennessee		.52	.27			2.11	.49	.77		.11	.01	.96					.92	.21		T.	.79		.37	1.31	.12		1.05				.68	10.69
Liberty ||	Cumberland											.09	1.80						1.15			.64			1.60	.56		1.00	.07			.72	
Loudon ||	Tennessee			.70	T.	T.		1.60	.38			.26	.50						1.19			.83			.91	.68		.87	.14			.22	8.28
Lynnville	do		T.	.71		.02	1.71	1.12	.66		.19		.81					.98	.26					.98	.23	.14		1.17				.60	9.48
McGhee ||	do			1.02					.50			.21	.49						1.49	T.		.96			.97	.91		.98	.12			.42	8.07
McMinnville	Cumberland			.53			1.40	2.25	.70		.20		.92					T.	.65			.83		.50	1.64	.10		.90				.70	11.32
Maryville	Tennessee							.89		.27	T.		.89					1.34			.88		1.94				1.36				.54	8.11
Mountain City	do			.40					.30				.56						.33			.29			.75	.28		.29				.20	3.40
Nashville	Cumberland		.71	.01		T.	3.08	2.98	.05		.10	2.03						.49	.02		.93	.01		.45	.52		.17	.42	T.		T.		12.30
Newport ||	Tennessee			.40	.06			.40					.60						.63	.10		.65	.03		.44	.83	.04	1.07	.40				5.65
New River ||	Cumberland			.52				3.30	.63				.72						1.34	T.		.93			1.07	.47		.82	.12			.63	10.55
Palmetto	Tennessee			.80		T.	2.02	1.10	.78		.17	T.	.69					.72	.45		.05	.60		.45	1.58			1.06				.60	11.07
Perryville	do		.83			.21	2.83	4.42	.73		.33		1.65					.84				.98		1.50	.94			.98					16.24
Pinewood	do		2.60			.08	*	*	8.00			.15	1.55					*	1.15			.77		.84		.68	T.	.80				*	16.62
Rogersville ||	do			.28	T.			.70	.48	.04		.11	.65	T.					.51	.11		.65			.78	.80	T.	.90	.32				6.33
Rugby	Cumberland			.10			2.00	1.45	.60				.60					.70	.45		.05	.75		.80	.90	.20		1.02				.55	9.57
Savannah	Tennessee		.62	.04		.12	2.30	2.08	1.05		.33	T.	1.55				1.20	.40		.05				.78	1.05	.05	T.	1.08				.60	13.30
Sevierville	do			1.09				.35	.35		.10		.38					.08	.94			.64		.68	1.70	.11		1.56				.36	8.34
Sewanee	do		.53	.20				2.81					1.93					.68							1.98			1.63					9.76
Sparta	Cumberland			.35			3.00	.95	.25		T.	T.	1.75					.15	.80					.48	1.34	T.		.95		T.		.62	10.64
Springville	Tennessee		.58	T.		.04	2.68	2.57	.65		.10	2.50	.90					.77	.07		1.02		.05	.96	.32			.05	T.			.50	13.76
Tazewell ||	do			.50	.25			2.45	.50	.05		.10	.96						.88	.15		.98			1.15	.60		.85	.30			.12	9.84
Tullahoma	do			.85			.53	3.23	.53		.31		.90					.19	.30			.71		.48	1.56	.11		.91				.71	11.32
Welling ||	Cumberland			.50			T.	5.00	1.02			.19	.99	T.					.60	T.		1.01			1.10	.70	T.	1.10				.55	12.76
Waynesboro	Tennessee		.95	.23		T.	1.80	.50	.78	T.	.09	.24	.80					1.04	.19	T.	.53	.18		.96	.95	.12	.03	1.20	.06			.50	11.15
Wildersville	do		1.10			.15	2.85	2.60	.70		.22	.25	.48					1.04	.10		.75	.12		1.09	1.15							1.18	13.78
Worsham ||	Cumberland		.65				4.00	5.48			.11	1.40						.95			.91			.78	.76		.45					.44	15.93
Yukon	Tennessee		T.	.92		T.	.95	1.25	.56		.23	.01	.80					.38	.36			.68		.61	.60	.05	1.20					0	9.30
Alabama.																																	
Bridgeport ||	Tennessee			.64				1.11	.31			.08	1.20						.88	.03		.56		.05	1.10	.85		1.42	.08			.40	8.71
Decatur ||	do			.83		.10		2.00	.40		.05	T.	1.30						.72			.68	.03		.47	.42		1.56	.03	.07		.46	9.12
Florence ||	do			.90			.20	.95	.68				.60					T.	1.50			.60			.68	.39		1.00	T.			.48	7.98
Guntersville ||	do			.72			.04	.52	.20			T.	.45						.92			.45	T.	.22	.82	.52		1.29	.04			.70	6.89
Madison	do							2.50	.41				1.40						.61			.70			.22							.71	6.55
Riverton ||	do			.67			.30		2.60	.81	.18	.02		.78				.04		1.65		.11			1.95	.18		1.02				.81	11.12
Scottsboro ||	do			.66		T.	T.	.93	.21		.05		.65					T.	1.06		T.	.30			1.00			1.31				.44	6.61
Tuscumbia ||	do			.88			.10	1.14	.61			.02	1.11						1.19			.57			.86	.10		1.12				.50	8.20
Georgia.																																	
Diamond	Tennessee			.78				T.	1.20		.08	.02	1.65						.12		T.	.29		.04	1.80	.04		.81				.48	7.31
North Carolina.																																	
Altapass	Tennessee																																
Andrews	do			.47				.05	.46		.10	.92							.85			.52		.05	1.59	.02		1.05				.70	6.78
Asheville	do			.30			T.		T.				.30					.11	.28			.13		.09	.29		.08	1.28				.09	2.95
Banners Elk	do			.50			T.		.50		T.		.32						.52			.25		.20	.35			1.30				.50	4.44
Blantyre	do			.04				.10	.15			.50	.30						.20		.10	.20		.40	.80			.17				.40	3.36
Blowing Rock	G. Kanawha			.55		.04	.14		.09				.29						.42		.02	.11	.09		.47			1.36				.47	4.05

TABLE 2.—*Daily precipitation for January, 1913. District No. 3*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***North Carolina*—Continued.**																																	
Brevard	Tennessee		.50	.25	.50	T.	.25				T.	.61					.23		.13		T.		T.	T.						.34		2.81
Bryson City ‖	do			.26				.10	.26				.98	.20					.96	.08		.42	.02		1.30	.42		1.15	.16			.05	6.36
Cullowhee	do			.13		T.	T.	T.	.13				.73						.40		.01	.25		.19	.68	T.		1.23	T.			.43	4.18
Hendersonville	do			.50				.03			.03	.01	.11						.23		.14	.16		.20	.54	.02		1.02				.42	3.41
Highlands	do		.55			.08	.26	.10	.65		.02	1.20						.50			.68			.88	.78			1.80				.38	7.88
Hot Springs	do			.40					.20		.07		.48						.46			.51			.69	.10		1.27		.01		.18	4.37
Jefferson	G. Kanawha			.40			.02	T.	T.		T.		.28						.23		T.	.08		.03	.18	.11		1.22		.03		.27	2.85
Marshall	Tennessee			.38					.10				.42						.53		T.	.36		.25	.49			1.02				.13	3.68
Murphy ‖	do			.86					.41			.14	.83						.87	.09		.42			.66	.69		1.06	.06			.03	6.12
Rock House	Savannah		T.	.48	T.	.05	.22	.13	.46		.04	.18	.63					.01	.32		.65			.98	.91		.01	1.78	T.			.45	7.30
Transon	G. Kanawha			.42			T.	.17			T.		.20						.30			T.		.10	.28			1.35				.21	3.03
Waynesville ‖	Tennessee																																
Virginia.																																	
Blacksburg	Kanawha		.07						.10				.43						.40			.09		.10	.27			1.05		.06		.12	2.69
Burkes Garden	Tennessee			.40				T.	.72				.85						.18			.50		.05	.42	.20		.71				T.	4.03
Elk Knob	do	T.		.33			.26	1.76	.52		.06	.03	.97				.09	.68		T.	.60		.76	.99	.31	.01	.81		T.		.41		8.59
Ivanhoe ‖	Kanawha			.44	.05		T.	T.		T.		T.	.18						.20			T.		.08	.10	.10		.88	.65	T.			2.68
Lebanon	Tennessee			.02	.01			.03		.06			.06						.02			.03		.04	.06	.02	.02	.02				.08	0.47
Max Meadows	Kanawha			.18			T.		T.		T.													T.	.25			1.35		T.		.10	1.88
Mendota ‖	Tennessee			.43	.23			.30	.42	.10		.02	.76						.40	.12		.75			.80	.87		.75	.28				6.23
Mountain Lake	Kanawha			.30					.40				.80						.40					.20	.30			.70				.40	3.50
Radford ‖	do			.75						T.			.38						T.						T.	T.		.60	1.02	T.			2.75
Speers Ferry ‖	Tennessee			.62	.20			1.68	.72	.26		.32	.92						.64			.60			.80	1.02		.20	.22				8.20
Wytheville	Kanawha			.47			T.			.11			.27					.03	.10			.10		.10	.12	.08		1.20		T.		.22	2.80

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 3, Ohio Valley.*

Date.	Pennsylvania.				West Virginia.														Ohio.							
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.§§		Morgantown.		Parkersburg.		Wheeling.§§		Canton.		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	41	24	47	32	53	29	52	30	47	27	60	22	50	27	49	29	49	30	48	25	43	23	52	30	45	29	48	28
2	49	27	56	38	62	30	56	34	60	27	65	35	58	29	58	38	60	31	56	26	47	35	56	34	50	31	48	33
3	43	29	47	23	61	25	50	22	51	20	47	21	29	27	55	20	48	23	35	27	42	24	34	23	35	22	33	20
4	31	21	30	22	46	25	48	20	35	21	37	21	41	25	41	20	33	24	30	23	26	21	34	24	29	19	29	19
5	37	6	51	23	60	33	57	35	54	30	55	28	58	27	38	24	54	27	42	23	37	8	55	24	48	20	53	19
6	47	35	54	47	65	45	60	33	64	49	60	35	58	32	61	37	54	46	50	28	47	36	57	44	53	37	53	38
7	51	32	59	50	66	53	69	54	61	48	60	48	63	50	59	49	61	47	61	39	55	32	62	40	56	34	56	34
8	55	23	59	22	66	34	66	31	63	23	64	31	43	42	61	33	60	26	.....	25	55	20	46	24	52	18	43	21
9	31	14	33	19	44	27	50	26	42	18	43	24	38	27	35	18	37	25	.....	.....	31	18	36	20	32	16	34	18
10	39	16	43	29	50	28	49	28	45	18	48	29	55	25	42	25	47	27	.....	.....	37	22	48	28	39	28	42	27
11	52	35	56	40	70	43	68	46	65	39	60	38	60	28	56	40	57	47	.....	.....	53	35	58	39	55	38	55	35
12	42	19	53	21	70	35	64	33	60	24	47	29	37	37	56	27	53	26	.....	.....	47	17	39	22	38	20	35	20
13	32	8	38	21	51	24	42	26	44	17	51	20	46	25	.....	.....	45	24	41	.....	35	15	44	22	40	20	39	20
14	40	12	44	29	51	28	50	28	48	25	50	21	43	25	46	16	44	29	46	25	40	19	42	28	39	24	39	24
15	43	22	50	37	60	30	58	30	58	20	60	23	53	26	53	30	54	31	52	26	42	30	46	33	43	31	45	30
16	49	37	54	42	67	43	62	37	57	40	54	40	61	27	52	39	62	43	60	40	48	41	61	46	54	41	56	44
17	55	44	59	52	66	52	69	40	63	46	56	41	63	45	62	46	60	50	54	46	53	47	60	53	55	50	55	51
18	54	32	56	35	64	49	59	49	57	32	62	46	60	50	.....	.....	60	35	56	50	53	33	55	36	53	33	53	33
19	42	29	48	32	68	30	60	30	59	24	61	24	60	29	58	28	56	28	52	29	45	28	58	32	52	30	55	30
20	58	32	63	30	70	40	65	40	65	32	70	35	68	29	64	.....	68	35	65	29	59	30	64	33	62	28	60	29
21	32	17	32	22	69	30	64	33	50	19	66	28	33	30	.....	24	35	28	35	27	31	20	37	27	30	23	32	24
22	38	18	40	33	45	30	55	34	44	23	48	24	56	26	40	19	40	24	47	23	38	21	41	27	38	25	40	27
23	56	26	60	39	66	36	60	46	60	40	62	22	62	26	59	33	61	38	61	25	54	31	61	38	57	33	54	35
24	46	30	44	37	66	43	58	54	56	40	61	34	55	45	58	35	51	40	49	39	39	30	45	39	41	35	40	32
25	45	24	47	33	52	38	56	43	51	30	64	35	49	33	48	31	50	33	51	31	45	26	50	32	47	31	46	26
26	55	34	54	40	55	28	58	33	58	29	64	36	57	33	55	32	56	41	57	31	54	34	54	40	53	35	52	36
27	46	24	50	27	58	30	47	34	49	27	60	32	40	35	51	30	51	30	37	34	46	25	48	33	44	27	44	28
28	29	22	34	27	60	27	40	25	35	26	52	32	43	27	33	25	39	27	38	26	29	24	40	32	36	28	34	24
29	34	23	36	31	48	32	41	35	40	29	38	24	43	30	36	31	40	32	45	28	30	25	42	25	36	24	37	22
30	47	26	56	35	67	32	62	32	62	27	66	24	61	35	59	33	60	38	53	34	45	29	60	40	54	34	56	37
31	47	23	55	28	67	37	51	40	54	29	42	23	51	35	58	33	55	30	55	38	47	26	52	12	48	8	50	8
Mns.	44.1	24.6	48.6	31.8	60.1	34.4	56.3	34.9	53.5	29.0	55.9	29.8	51.4	31.8	51.5•	30.2•	51.6	32.7	49.1•	30.7•	43.6	26.6	49.6	31.6	45.6	28.1	45.7	28.1

Date.	Ohio.				Indiana.										Phila, Ill.		Kentucky.									
	Marion.		Waverly.		Butlerville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.				Beattyville.§§		Bowling Green.§§		Earlington.§§		Greensburg.§§		Lexington.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1	42	22	50	23	51	24	55	31	47	27	45	23	50	20	50	22	47	18	61	20	56	25	57	26	68	24	53	33
2	46	34	56	28	49	35	50	26	48	27	44	32	46	31	49	32	43	26	60	22	63	40	55	34	61	24	57	32
3	44	24	52	24	35	22	35	25	29	22	39	20	32	22	33	24	33	22	31	23	39	22	35	23	32	25	32	22
4	24	15	30	17	33	22	48	29	27	19	27	18	30	22	33	23	26	16	57	17	60	21	59	23	58	23	51	23
5	33	10	37	25	47	22	61	30	48	18	31	9	36	19	45	22	32	14	70	20	64	34	68	32	69	28	64	30
6	46	32	58	33	55	42	61	39	49	33	45	30	54	32	57	37	33	25	58	31	62	55	57	41	60	38	56	50
7	36	31	59	42	56	41	40	31	40	32	33	22	38	31	40	34	32	29	76	40	62	52	47	35	62	54	60	49
8	43	23	50	29	47	21	31	23	33	23	33	19	39	21	38	24	29	18	54	32	28	26	27	22	32	31	49	24
9	33	7	38	23	37	19	38	26	33	20	32	14	35	16	36	23	31	19	48	20	41	23	42	20	44	26	36	19
10	36	22	39	20	40	24	47	33	41	26	34	21	37	26	39	26	35	24	57	20	57	27	56	21	61	26	49	31
11	51	34	55	37	55	39	53	31	47	31	40	32	40	34	46	38	36	22	63	25	58	40	56	36	62	34	57	49
12	42	23	54	30	52	20	31	16	31	14	34	10	34	7	40	14	22	5	36	34	30	24	28	13	32	29	53	23
13	38	17	44	20	40	17	38	23	36	15	35	6	37	11	35	18	29	10	53	20	38	21	43	13	50	22	44	23
14	39	20	43	21	37	27	40	30	34	25	34	20	38	17	38	20	34	17	56	23	52	26	45	19	48	22	44	27
15	40	30	49	23	40	30	55	38	45	30	40	27	39	31	44	30	41	31	62	21	57	32	63	22	60	22	53	34
16	47	37	49	39	56	39	56	49	54	45	50	38	53	39	53	44	52	41	67	27	62	35	64	41	66	29	63	48
17	55	46	62	48	58	52	56	51	56	52	56	48	57	51	55	52	54	47	64	39	57	50	56	55	62	57	57	51
18	52	33	58	41	55	37	54	38	54	31	53	30	56	33	55	36	52	29	61	46	65	50	59	48	59	52	56	36
19	47	26	55	24	54	28	59	36	57	30	50	26	53	25	56	28	55	27	67	23	65	30	65	29	66	28	60	34
20	57	42	67	42	60	37	58	27	59	21	56	31	59	24	59	31	57	21	68	29	67	35	66	57	68	29	66	31
21	45	17	64	27	38	23	34	21	32	15	32	8	31	9	32	15	29	10	38	30	35	26	39	24	35	30	32	27
22	41	20	42	18	41	22	40	28	38	23	37	18	42	19	40	20	36	18	59	28	56	25	57	22	59	26	40	26
23	53	31	62	34	56	35	54	39	51	34	46	32	49	33	51	35	41	33	60	28	61	35	63	29	62	28	60	39
24	45	32	56	38	48	35	46	38	43	34	41	26	43	29	44	36	40	27	47	45	55	43	45	35	45	45	45	38
25	48	25	53	26	50	25	50	34	48	31	44	25	48	19	49	24	48	25	60	38	50	33	55	29	55	31	50	30
26	55	30	57	34	54	34	51	40	54	36	54	34	54	33	53	35	52	34	61	27	53	30	57	29	57	31	53	32
27	55	24	51	32	50	30	42	30	39	26	50	24	52	25	47	28	41	24	41	32	41	38	37	32	42	36	45	29
28	30	23	40	23	36	28	37	28	35	21	31	21	35	26	35	29	33	19	43	22	41	25	41	27	43	25	39	27
29	30	21	38	23	38	26	48	26	40	20	36	9	40	16	41	21	41	11	51	25	48	27	49	27	42	29	41	28
30	47	27	61	33	57	33	55	44	58	40	55	31	58	37	57	37	54	36	67	26	59	34	60	33	60	30	60	36
31	47	25	53	31	54	27	45	14	46	5	51	20	51	17	53	24	46	8	46	30	41	32	42	33	40	35	52	21
Mns.	43.5	25.9	51.3	29.6	47.7	29.5	47.3	31.4	43.6	26.6	41.5	23.4	44.1	25.0	45.3	28.5	39.8	22.8	56.2	27.8	52.4	32.8	51.4	30.0	53.5	31.3	50.8	32.3

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 3*—Continued.

Date.	Kentucky.						Tennessee.												Decatur, Ala.§§		Asheville, N. C.		Virginia.			
	Louisville.		Maysville.§§		Williamsburg.§§		Chattanooga.		Johnson City.§§		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynesboro.				Blacksburg.		Wytheville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	55	32	57	23	57	22	55	32	54	28	53	29	56	30	57	27	59	43	59	24	58	28	56	29	52	27	50	30
2....	58	28	59	26	58	23	57	35	52	28	53	29	62	27	60	38	56	35	62	37	63	28	52	26	54	22	55	24
3....	30	25	28	25	34	24	37	28	26	25	45	25	37	26	50	24	53	25	41	24	42	26	48	23	42	24	41	21
4....	42	28	45	23	51	24	63	31	56	16	60	25	65	29	64	25	60	23	65	28	.....	26	52	26	48	28	49	20
5....	59	30	57	25	65	22	67	54	63	21	66	50	65	58	65	58	66	40	65	56	.....	.....	56	48	59	27	58	32
6....	60	45	58	30	65	40	66	56	68	49	69	46	62	56	71	60	63	53	64	58	.....	.....	61	50	59	29	61	46
7....	62	38	60	42	73	54	73	61	75	51	73	55	67	37	70	61	72	52	68	56	.....	.....	70	58	72	47	72	53
8....	38	27	37	36	40	39	67	28	57	55	68	28	37	26	66	27	69	28	56	25	50	.....	62	34	63	29	62	26
9....	38	23	41	19	48	27	47	27	51	25	43	28	42	28	47	24	48	25	45	24	47	27	39	22	38	21	39	20
10....	48	31	54	18	55	24	43	36	40	25	41	30	55	36	45	33	48	31	49	42	55	27	53	26	38	16	41	19
11....	58	39	56	28	66	40	61	43	64	30	66	40	64	42	63	45	63	47	65	47	66	41	66	53	67	33	70	37
12....	39	23	34	32	50	45	62	35	46	36	66	34	42	26	63	28	64	30	63	27	39	38	56	33	51	34	59	28
13....	43	24	48	22	55	39	53	32	54	26	51	30	48	26	50	23	53	23	46	20	53	28	43	28	39	23	40	21
14....	40	28	49	23	52	19	55	32	57	26	53	30	50	30	56	25	57	23	56	22	57	27	52	26	48	18	48	23
15....	55	32	52	27	58	23	57	40	56	25	54	28	59	38	60	33	60	30	61	33	61	30	56	28	53	17	55	20
16....	62	51	60	31	67	26	63	45	63	29	62	35	64	50	64	47	68	47	65	46	67	38	62	32	63	26	64	28
17....	61	54	60	47	65	49	66	53	69	31	67	41	62	53	61	53	62	43	60	54	65	45	64	43	63	34	62	35
18....	56	37	60	49	68	50	66	49	55	37	65	46	59	42	66	54	63	48	68	44	65	53	59	44	58	46	54	35
19....	62	34	61	27	66	49	65	40	68	33	63	36	63	36	66	37	66	32	60	35	66	42	61	31	60	25	61	28
20....	66	31	68	28	68	42	65	53	69	33	69	47	69	33	69	60	69	52	69	42	69	50	60	49	62	34	60	35
21....	36	26	37	27	36	28	53	40	45	38	55	37	36	31	65	33	65	35	42	32	42	35	57	40	54	37	57	33
22....	42	28	50	23	58	33	51	36	57	37	52	36	54	32	54	33	58	32	53	30	58	36	53	39	52	28	52	34
23....	59	42	61	23	65	34	61	51	64	38	61	44	64	51	61	45	62	40	62	49	64	37	56	43	52	35	57	40
24....	45	39	44	41	58	50	61	55	58	50	58	53	51	44	61	48	60	40	61	45	61	58	55	48	56	45	56	50
25....	50	31	54	30	58	42	60	44	58	49	53	40	50	39	48	37	53	43	45	36	49	46	57	43	55	43	53	38
26....	54	37	54	30	56	32	50	38	59	35	51	32	48	33	56	34	55	32	52	31	56	40	61	34	59	30	61	36
27....	47	32	40	35	48	30	45	36	40	39	45	32	45	32	48	29	52	37	46	31	43	40	48	32	42	37	46	28
28....	39	31	41	25	59	28	50	30	45	25	45	27	46	29	46	25	50	30	49	22	50	27	46	26	44	20	43	22
29....	45	23	42	18	61	35	51	36	45	26	47	35	50	31	50	30	45	24	52	29	53	26	46	31	44	28	40	32
30....	59	41	63	28	63	36	60	34	60	29	58	30	58	42	57	40	61	29	60	39	59	34	57	26	62	24	59	31
31....	54	15	48	38	48	20	51	35	58	31	57	31	55	34	54	33	53	33	54	35	49	38	49	29	51	37	52	29
Mns..	50.4	32.4	50.9	29.0	57.1	33.8	57.5	40.2	55.9	33.1	57.1	35.8	54.4	36.4	58.5	37.7	59.1	35.6	56.9	36.2	55.8[d]	36.0[d]	55.3	35.3	53.5	29.8	54.1	30.8

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

GENERAL SUMMARY.

Over the greater portion of the Lake region the month of January, 1913, was characterized by daily mean temperatures considerably above the normal, frequent precipitation, and the absence of heavy snowfalls. In northern Vermont and New York the lack of snow caused serious inconvenience to business interests, especially logging and teaming, and in the former State these conditions were without precedent as far as reliable records are concerned. The temperature over the entire district during the month was in marked contrast to that experienced in January, 1912, the mean monthly temperatures in many instances for January, 1913, exceeding those of the former month by from 18° to 21°. It will be recalled that January, 1912, was the coldest month of its name on record in all portions of the district, while the present month, in eastern and central portions, was one of the warmest midwinter months in many decades. In Ohio and Pennsylvania the monthly means at many stations even exceeded those of the previous month of December.

Precipitation during the month was mostly in the form of rain in eastern and central sections and along the southern shore of Lake Erie it was exceptionally heavy. The most severe storm of the month occurred on the 7th–8th, when great damage was done in northern Ohio. A detailed account of this storm and its effects is given on the following page.

Sunshine was generally deficient, except in the lower Lake region, and markedly so in the upper Michigan peninsula. Wind movement was in excess of the normal at nearly all stations.

The following table briefly summarizes the chief features of meteorological interest in the various portions of the district:

States and portions of States.	Mean temperature.	Departure.	Mean daily range.	Mean precipitation.	Departure.	Greatest precipitation in 24 hours.	Mean snowfall.	Number of days—				Prevailing wind direction.
								With 0.01 inch or more.	Clear.	Partly cloudy.	Cloudy.	
Minnesota	6.3	− 2.0	20.0	0.41	−0.44	0.34	5.2	5	13	9	9	nw.
Wisconsin	18.1	+ 1.3	16.4	1.18	−0.25	1.33	12.7	8	11	6	14	nw.
Illinois	29.3	+ 5.6	14.6	1.40	−0.58	0.50	7.8	12	4	10	17	s.
Indiana	30.4	+ 5.3	15.1	4.08	+2.42	1.50	6.6	14	7	6	18	sw.
Upper Michigan	16.3	+ 1.8	15.6	1.56	−0.23	0.84	15.8	11	6	6	19	w.
Lower Michigan	26.6	+ 4.4	13.7	2.47	+0.22	2.50	11.3	10	6	6	19	sw.
Ohio	33.2	+ 6.8	14.5	6.36	+3.76	1.55	10.4	16	7	5	19	sw.
Pennsylvania	35.9	+ 9.4	13.8	5.60	+2.57	1.13	4.1	17	4	6	21	s.
New York	30.3	+ 9.6	15.2	4.75	+1.63	2.00	12.5	15	6	9	16	s.
Vermont	27.9	+11.5	20.2	3.14	+0.53	0.97	10.1	13	6	10	15	s.

TEMPERATURE.

The mean temperatures for the month were above the normal in all sections, except in Minnesota, the greatest departures occurring in New York and Vermont, where the monthly means exceeded the normal by from 9° to 13°. Thence westward these departures gradually decreased, reaching the region of practically no departure in northern Wisconsin and central upper Michigan, there being a deficiency in temperature in Minnesota, as stated above. However, in this latter section the month was not unusually cold, the greatest average negative departure being 4.1°, at Duluth, Minn. Over the eastern portions of the district the month was one of extreme and persistent warmth and daily positive departures of 15° were frequent. At Canton, N. Y., and Burlington and Northfield, Vt., the daily excesses in temperature for the period from the 15th to the 18th, inclusive, averaged from 22° to 23°, a most remarkable record for the middle of January. This same period brought the highest maximum temperatures to practically all portions of the district, although in no section were high temperature records broken, the abnormal warmth being due to unusually high minimum temperatures and the absence of zero weather of long duration.

The month opened with a continuation of the mild weather which prevailed in all sections during the month of December. The first cold period as well as the most prolonged occurred from the 4th to the 9th, inclusive, but was not severe except in Minnesota. The lowest temperatures of the month occurred quite generally in western sections during the prevalence of a short but severe cold wave from the 11th to the 13th, a minimum of −36° being reported at Stephens Mine, Minn., on the 11th, and −31° at Bergland, Wis., on the 13th. Over eastern and central parts the lowest readings were recorded either during this period or the one from the 4th to the 9th, there being no cold weather of any extent throughout the balance of the month. In Ohio zero temperature was not reached at any time during the month, the lowest being 3° at Bowling Green. This fact is worthy of mention in that only twice before in the history of the Ohio State Weather Service, covering a period of about 40 years, has this record been equaled. On the 30th and 31st unusually high daily means were again noted in New York and Vermont.

PRECIPITATION.

The precipitation during the month was above the normal amount in Indiana, Ohio, New York, and Vermont, but in the northwestern portion of the district there was a slight deficiency, generally under 1 inch. In the latter

section, where the precipitation was largely snow, the deficiency was due to small amounts for each storm rather than infrequency of occurrence, while in the central and eastern sections about three-fourths of the precipitation was in the form of frequent and general rains. In Ohio the month was the wettest January on record at 19 stations, and aside from these, at most places the monthly total was more than twice the usual amount. In New York the month also ranked as an exceptionally wet month.

Snow.—The snowfall was generally below the normal, except in northern Wisconsin, northeastern Indiana, and central Ohio, where in the two last-named sections heavy falls occurred on the 3d and 28th. This snow, however, did not remain on the ground long. In portions of western New York and in Vermont the snowfall was unusually light.

At the end of the month there was no appreciable snow covering over the southern and eastern portions of the district, while in upper Michigan the depths ranged from 5 inches at Escanaba to 36 inches at Houghton.

STORMS.

Although over most of the district the month was free from frequent and general storms, this statement will not apply to northern Indiana and Ohio, which sections appear to have received the brunt of the only two severe storms of the entire month, occurring on the 7th, 8th, and on the 18th. The lowest barometer readings on record, over the eastern portions of the district, were reached during the passage of a depression down the St. Lawrence Valley on the 3d. At Canton, the phenomenally low pressure of 28.20 inches (sea level) was recorded at 8 p. m. of the 3d. Considering this unprecedented low reading, the winds were not unusually destructive, and but little serious damage from this source resulted. However, at Rochester, N. Y., the electric and telephone companies reported that the damage due to snow and sleet in connection with this storm was the most costly on record in their localities.

The disturbance of the 7th–8th was in the nature of a rain and sleet storm, regarding which the observer at Toledo reports as follows:

> On the night of the 6th–7th, and during the day of the 7th, the rainfall was continuous, freezing wherever it fell and forming ice on trees, electric wires, etc., to 1 inch in thickness. This ice broke a large number of limbs on the trees, in some cases stripping them, and it completely demoralized telegraph and telephone service, and seriously crippled electric car service, both urban and interurban. The ice did not melt for three or four days, so that it was impossible to repair the broken wires during that time, but fortunately there were no high winds. The resulting damage in and about Toledo is estimated at many thousands of dollars. Reports indicate that the area of damage by the freezing rain extended 15 to 20 miles north and south of Toledo, and probably 40 to 50 miles east and west.

The storm of the 18th caused high winds, which did much damage principally in Ohio, buildings being unroofed, oil derricks and trees blown down, and several persons seriously injured. At Cleveland, Ohio, the wind reached a maximum velocity of 60 miles an hour.

ICE AND NAVIGATION.

On account of the prevalence of unusually high temperatures during most of the month, ice in large quantities formed only in the northern portions of the district. In eastern and southern sections, the rivers and harbors were generally free from ice, and navigation was not seriously hindered at any time. At the end of the month the thickness of ice in northern harbors on the Lakes ranged from 24 inches at Duluth, Minn., to 9 inches at Sault Ste. Marie, Mich.

RIVERS AND FLOODS.

No serious floods occurred during the month, and while some damage from high water was reported at Port Huron, Mich., it was not caused by an overflow from the Black River, but by water which accumulated in a poorly drained section of the city, as the result of thaws. The Maumee River at Fort Wayne was above the flood stage on nine days of the month, and a few residences in the lower part of the city were flooded.

MISCELLANEOUS.

Thunderstorms, occurring in either Indiana or Ohio, were reported on the 6th, 7th, 18th, and 20th.

JANUARY LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan and Huron.	Lake Erie.	Lake Ontario.
	Feet.	*Feet.*	*Feet.*	*Feet.*
Above tidewater at New York	601.04	580.08	572.27	246.51
Above or below:				
Stage of December, 1912	−0.27	−0.15	+0.80	+0.40
Stage of January, 1912	+0.08	+0.77	+0.99	+1.75
Mean stage January last 10 years	−0.24	+0.06	+0.58	+1.08
Highest recorded stage	−0.94	−2.59	−1.28	−1.09
Lowest recorded stage	+0.96	+1.00	+1.31	+2.71
Probable change during February	−0.20	0.00	− .10	+0.10

TABLE 1.—*Climatological data for January, 1913. District No. 4, Lake Region.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Minnesota.																				
Cloquet	Carlton	800	2	5.2	.....	38[a]	1	− 32[a]	12	52[a]	0.42	.....	0.28	4.2	3	13	6	12	w.	W. H. Kenety.
Duluth	St. Louis	1,133	42	6.3	− 4.1	38	1	− 28	12	41	0.75	− 0.23	0.26	9.3	12	8	9	14	nw.	U. S. Weather Bureau.
Floodwood	.....do	1,257	6	.....	.....	.....	.....	.....	.....	.....	0.46	.....	0.34	6.0	2	.....	.....	.....	.....	M. H. Schussler.
Stephens Mine	.....do	1,500	6	4.6	.....	40	17	− 36	11	54	0.29	.....	0.20	3.0	3	18	9	4	w.	Oliver Iron Mining Co.
Two Harbors	Lake	614	19	11.6	− 0.4	40	1	− 26	12	42	0.19	− 0.48	0.08	5.0	4	9	16	6	nw.	G. W. Watts.
Virginia	St. Louis	1,434	19	3.7	− 1.5	35	1†	− 34	12	45	0.33	− 0.60	0.12	3.4	6	15	5	11	nw.	Oliver Iron Mining Co.
Wisconsin.																				
Appleton	Outagamie	795	12	19.4	+ 3.4	44	17	− 9	12	31	1.48	− 0.44	0.55	15.7	11	15	1	15	sw.	Wm. O. Thiede.
Ashland	Ashland	615	22	11.2	− 3.6	42	16	− 24	12	45	0.59	− 0.55	0.36	5.5	6	5	11	15	sw.	Agr. Exper. Station.
Bayfield	Bayfield	635	4	12.4[f]	.....	41[f]	1	− 16[f]	12	37[f]	0.32	.....	0.22	3.2	4	13[g]	0[g]	11[g]	nw.	F. Kern.
Cecil	Shawano	804	15	16.8	− 0.5	42	17	− 14	14	41	0.65	− 0.67	0.12	14.5	10	15	6	10	sw.	Louis W. Schmidt.
Cornucopia	Bayfield	640	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Reed Fruit Co.
Crandon	Forest	1,060	18	13.2	+ 1.6	41	17	− 16	12	35	0.65	− 0.73	0.30	6.5	4	12	8	11	nw.	Frank Shoemaker.
Florence	Florence	1,293	22	14.0	+ 0.6	41	17	− 13	13	37	1.47	+ 0.39	1.07	4.0	5	11	1	19	nw.	Fred S. Evans.
Fond du Lac	Fond du Lac	800	27	19.5	+ 2.5	49	17	− 10	12	34	2.66	+ 1.36	1.33	20.8	7	20	3	8	w.	Edward A. Seeley.
Grand River Locks	Marquette	770	17	18.4	.....	47	17	− 14	14	40	0.96	− 0.14	0.58	16.0	8	13	4	14	nw.	Jerry Parkinson.
Green Bay	Brown	617	27	18.4	+ 3.8	47	17	− 7	12	31	1.17	− 0.52	0.30	13.0	10	5	9	17	s.	U. S. Weather Bureau.
High Falls	Marinette	1,125	1	16.7	.....	43	17	− 16	28	40	1.64	.....	0.50	11.4	13	8	14	9	nw.	No. Hydro-Elec. Pow. Co.
Iron River	Bayfield	1,096	4	9.3	.....	41	1	− 29	12	45	1.45	.....	0.30	14.5	10	15	1	15	w.	Winfield E. Tripp.
Kewaunee	Kewaunee	590	4	20.4	.....	45	17	− 6	12†	33	1.76	.....	0.50	16.5	8	8	4	19	nw.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	62	22.0	+ 2.9	48	17	− 5	12	29	1.51	− 0.19	0.51	17.5	10	9	3	19	s.	Miss Johanna Lups.
Menasha	Winnebago	764	16	.....	.....	.....	.....	.....	.....	.....	0.75	− 0.14	0.19	14.8	8	10	5	16	sw.	Geo. T. Allanson.
Menominee Falls	Waukesha	842	4	21.7	.....	48	17	− 8	12†	32	1.07	.....	0.52	12.8	9	11	10	10	s.	Arthur H. Christman.
Milwaukee	Milwaukee	681	43	23.8	+ 4.0	51	17	− 5	12	29	1.07	− 0.94	0.46	9.7	11	5	11	15	sw.	U. S. Weather Bureau.
New London	Outagamie	762	17	17.8	+ 1.2	48	15	− 13	12	31	0.66	− 0.50	0.41	15.0	5	5	6	20	nw.	August H. Pape.
Oconto	Oconto	590	22	19.2	+ 1.5	44	17	− 7	12	28	1.67	+ 0.03	0.40	15.0	10	11	13	7	s.	Wm. K. Smith.
Oshkosh	Winnebago	744	24	19.1[a]	+ 0.8	47[a]	16	− 12[a]	11	38[a]	1.20	− 0.21	0.40	12.0	4	16	7	8	sw.	Evan Vincent.
Pine River	Waushara	900	18	17.8	+ 1.1	46	17	− 15	12	33	0.86	− 0.14	0.21	13.3	10	7	13	11	nw.	Geo. H. Carpenter.
Plum Island	Door	588	5	23.0	.....	43	17	− 2	21	28	1.32	.....	0.30	15.0	8	13	0	18	nw.	Wm. Robinson.
Plymouth	Sheboygan	843	3	20.0	.....	48	17	− 8	12	30	1.31	.....	0.54	12.6	9	8	10	13	sw.	Paul O. Feldrappe.
Port Washington	Ozaukee	713	20	23.4	+ 3.2	50	17	− 7	12	35	1.35	− 0.57	0.80	10.5	4	6	6	19	nw.	Richard C. Kann.
Racine	Racine	633	16	25.9	+ 2.2	52	17	− 5	12	30	0.97	− 0.79	0.48	6.5	6	12	3	16	sw.	Daniel Davis.
Ripon	Fond du Lac	1,031	3	18.8	.....	46	17	− 13	12	30	1.39	.....	0.40	14.8	10	15	4	12	sw.	Ripon College.
Sheboygan	Sheboygan	831	14	21.0	− 0.3	48	17	− 10	12	40	2.05	+ 0.10	0.80	20.5	5	9	10	12	nw.	Louis C. Meyer.
Sturgeon Bay	Door	600	14	20.0	− 0.7	47	17	− 8	13	30	1.30	.....	0.38	18.0	8	11	4	16	nw.	Adam N. Dier.
Superior	Douglas	701	4	7.2	.....	40	1	− 24	12	40	0.17	.....	0.04	2.1	7	14	3	14	sw.	Edward B. Banks.
Waupaca	Waupaca	857	18	16.4	+ 0.2	43	17	− 15	13	36	0.86	− 0.15	0.24	16.5	10	10	7	14	sw.	James H. Flagg.
Illinois.																				
Chicago	Cook	823	43	29.3	+ 5.6	55	17	0	12	32	1.40	− 0.58	0.50	7.8	12	4	10	17	s.	U. S. Weather Bureau.
Evanston	.....do	601	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	City of Evanston.
Indiana.																				
Auburn	Dekalb	874	17	30.2[b]	+ 4.9	57[b]	17	− 1[a]	9	38[b]	3.96	+ 1.68	0.80	.....	11	8[a]	2[a]	20[a]	sw.	Mrs. Josie B. Kuhlman.
Berne	Adams	849	4	33.4	.....	59	20	12	9†	31	7.28	.....	1.33	11.5	18	7	6	18	sw.	Henry M. Reusser.
Ft. Wayne	Allen	856	17	31.8	+ 4.9	56	17	3	31	42	5.54	+ 3.17	1.50	10.0	19	6	6	19	sw.	U. S. Weather Bureau.
Hammond	Lake	598	22	29.8[a]	+ 6.1	54[a]	17	− 1[a]	12	32[a]	.....	.....	.....	.....	.....	6[a]	8[a]	16[a]	.....	Carson W. Whitney.
Howe	Lagrange	886	8	29.6	.....	52	16	10	13†	30	3.17	.....	1.23	2.0	10	10	0	21	.....	James E. Zook.
Notre Dame	St. Joseph	712	2	28.8	.....	55	17	4	31	36	2.83	.....	0.96	2.7	18	2	9	20	sw.	U. S. Weather Bureau.
Whiting	Lake	606	4	29.0	.....	52	17	1	-12	33	1.68	.....	0.73	7.0	8	11	9	11	sw.	D. H. Boyd.
Michigan—Upper Peninsula.																				
Baraga	Baraga	623	11	17.0	+ 2.1	52	16	− 8	5†	35	.....	.....	.....	.....	.....	10	0	21	w.	D., S. S., & A. Ry.
Bergland	Ontonagon	1,300	3	10.7	.....	41	17	− 31	13	48	1.14	.....	0.40	.....	6	7	3	21	w.	Frank McMonigal.
Calumet	Houghton	1,246	25	14.4	− 1.0	38	17	− 10	21	32	2.32	− 0.28	0.32	29.0	16	2	3	26	w.	E. S. Grierson.
Chatham	Alger	875	12	14.6	− 1.3	41	17	− 11	21	41	2.30	0.0	0.80	23.0	8	2	3	26	n.	Upper Peninsula Exp. Sta.
Deer Park	Luce	610	12	20.6	+ 2.4	40	15	− 2	21	22	1.10	− 1.02	0.20	10.0	7	6	1	24	s.	Mrs. Sarah E. McGaw.
Detour	Chippewa	585	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Jones, jr.
Eagle Harbor	Keweenaw	622	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Nolen.
Escanaba	Delta	612	40	17.5	+ 3.0	40	17	− 6	21	35	0.82	− 0.73	0.22	8.6	12	4	5	22	nw.	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	12	11.2	− 1.8	42	17	− 22	12	43	2.36	+ 1.07	0.62	23.0	12	9	2	20	nw.	W. B. Hatfield.
Grand Marais	Alger	610	12	18.0	− 0.1	42	17	− 6	21	28	3.00	+ 0.39	0.30	30.5	18	1	2	28	s.	Mrs. Lena Truedell.
Green	Ontonagon	622	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. A. Green.
Houghton	Houghton	668	12	15.5	+ 1.6	41	17	− 8	21	29	1.62	− 0.42	0.84	24.4	18	2	4	25	nw.	U. S. Weather Bureau.
Humboldt	Marquette	1,536	16	13.1	+ 2.4	42	17	− 27	13	42	0.41	− 0.82	0.30	4.1	3	5	0	26	w.	D., S. S., & A. Ry.
Iron Mountain	Dickinson	1,111	12	15.8	+ 0.5	44	17	− 11	12	34	0.65	− 0.09	0.12	4.8	11	8	11	12	nw.	Chapin Mining Co.
Iron River	Iron	1,504	16	11.6	+ 0.8	35	1†	− 18	12	40	1.20	− 0.06	0.40	8.0	6	23	5	3	nw.	Victor D. Laing.
Ironwood	Gogebic	1,520	10	11.8	0.0	40	17	− 22	12	40	1.38	− 0.70	0.81	11.0	5	12	5	14	sw.	J. V. Brennan.
Ishpeming	Marquette	1,536	13	14.1	+ 1.3	39	17	− 12	21	28	0.80	− 1.05	0.40	8.0	13	1	12	18	s.	Cleveland Cliffs Iron Co.
Isle Royale	Keweenaw	610	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Malone.
Mackinac Island	Mackinac	831	12	22.5	+ 3.8	45	17	0	8	26	1.42	− 0.57	0.60	4.0	6	2	2	27	w.	Mackinac I. State Park Com.
Maple Ridge	Delta	.....	7	15.8	.....	39	17	− 10	13	34	1.10	.....	0.20	11.0	6	10	10	11	n.	Herman Johnson.
Marquette	Marquette	734	42	17.8	+ 1.9	43	17	− 8	21	29	2.03	− 0.01	0.64	20.2	18	2	6	23	w.	U. S. Weather Bureau.
Menominee	Menominee	581	14	19.9	+ 1.8	43	17	− 6	12	28	1.29	+ 0.20	0.38	11.9	7	15	7	9	nw.	Chicago & North Western Ry.
Munising	Alger	631	16	20.2	+ 4.7	44	17	− 5	21	30	2.48	+ 0.33	0.51	30.4	18	2	5	24	s.	Albert Oas.
Newberry	Luce	773	11	19.2	+ 3.6	43	17	− 7	13	28	1.56	− 0.01	0.21	19.0	20	2	6	23	sw.	John Brown.
Powers	Menominee	868	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Chicago & North Western Ry.
St. Ignace	Mackinac	593	23	22.0	+ 4.0	45	17	0	12	26	1.95	− 0.12	0.60	19.4	12	5	17	9	e.	D., S. S., & A. Ry.
Sault Ste. Marie	Chippewa	614	25	17.7	+ 4.4	44	17	− 9	31	35	1.31	− 0.86	0.26	16.0	19	2	6	23	se.	U. S. Weather Bureau.
Seney	Schoolcraft	730	1	18.1	.....	43	17	− 16	5†	45	1.74	.....	0.60	17.5	9	3	11	17	nw.	Western Land Securities Co.
Thomaston	Gogebic	1,347	16	9.5[b]	− 2.7	38[b]	16	− 20[c]	12	39[b]	.....	.....	.....	.....	.....	3[c]	17[c]	8[c]	n.	D., S. S., & A. Ry.
Victoria	Ontonagon	1,263	3	12.6	.....	38	19	− 16	13†	31	1.70	.....	0.50	18.0	8	10	9	12	w.	R. S. Schultz, jr.
Watersmeet	Gogebic	.....	4	12.4	.....	40	17	− 17	12	40	0.84	.....	0.20	8.4	11	7	3	21	sw.	B. N. Grant.
Whitefish Point	Chippewa	610	13	22.4	+ 4.4	46	17	− 3	13	32	2.40	+ 2.2	0.36	24.8	15	4	0	27	sw.	Robert Carlson.

TABLE 1.—*Climatological data for January, 1913. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Michigan—Lower Peninsula.																				
Adrian	Lenawee	770	35	30.4	+ 7.4	52	17	10	9†	26	2.91	+ 0.81	0.88	13.6	12	8	6	17	sw.	H. E. Hubbard.
Allegan	Allegan	698	22	30.4[b]	+ 7.0	47	19	8[c]	9	31[c]	1.97	− 0.08	0.50	16.0	10	3	7	21	s.	Pere Marquette R. R.
Alma	Gratiot	750	26	25.2	+ 3.7	50	17	2	13	28	1.97	− 0.52	0.62	15.0	8	5	8	18	sw.	P. M. Smith.
Alpena	Alpena	609	40	23.1	+ 4.4	50	17	2	28	29	1.53	− 0.67	0.49	17.2	16	1	9	21	sw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	33	28.7	+ 6.2	52	17	7	13	30	3.02	+ 1.09	1.01	3.8	15	9	8	14	sw.	University of Michigan.
Arbela	Tuscola	728	17	24.8	+ 1.8	50	17	− 6	9	29	2.35	+ 0.10	0.75	15.0	7	1	7	23	sw.	Wm. Atkin.
Battle Creek	Calhoun	822	29	28.6	+ 5.1	51	17	6	9†	28	3.53	+ 1.40	1.10	8.0	8	6	3	22	sw.	Elmer E. Sager.
Bay City	Bay	593	17	26.7	+ 4.1	52	17	4	13	31	1.85	− 0.31	0.80	13.8	9	15	11	5	sw.	Pere Marquette R. R.
Benzonia	Benzie	832	16	24.3	+ 2.8	49	17	5	12*	25	3.24	− 0.04	1.28	32.0	13	3	16	12	sw.	Wallace Nutting.
Berlin	St. Clair	.....	24	26.4[a]	+ 4.1	49[a]	17	− 1[a]	9†	27[a]	4.17	+ 2.09	0.82	10.5	13	2[a]	7[a]	21[a]	se.	R. O. Gould.
Big Rapids	Mecosta	906	17	25.0	+ 5.0	51	17	− 3	9	32	1.24	− 1.52	0.53	.....	4	1	12	18	sw.	Supt. Waterworks.
Blissfield	Lenawee	687	1	30.2	.....	55	17	8	9†	24	3.61	.....	1.10	.....	7	12	3	16	nw.	Harry Watson.
Bloomingdale	Van Buren	.....	9	27.7	.....	53	17	5	13	32	1.25	.....	0.40	5.5	6	8	3	20	se.	John M. Haven.
Cadillac	Wexford	1,293	4	22.4	.....	45	17	0	9	24	2.25	.....	0.63	20.6	11	0	5	26	sw.	Cadillac Water & Light Co.
Cassopolis	Cass	903	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Central R. R.
Charlevoix	Charlevoix	610	35	24.8	+ 4.1	48	19	− 2	31	35	1.60	− 0.93	0.30	16.0	7	4	5	22	w.	Pere Marquette R. R.
Charlotte	Eaton	.....	9	27.6	.....	51	17	− 3	9	35	1.90	.....	0.80	15.0	5	6	5	20	sw.	City of Charlotte.
Cheboygan	Cheboygan	611	23	21.8	+ 3.2	45	18	− 2	14	32	1.27	− 0.36	0.60	4.3	5	3	19	9	sw.	E. A. Bouchard.
Clinton	Lenawee	830	23	31.0	+ 7.3	58	25	6	9	34	4.01	+ 2.15	1.20	2.4	11	8	9	15	sw.	David Woodward.
Coldwater	Branch	984	16	30.0	+ 4.8	49	20†	9	9†	27	4.09	+ 2.13	1.15	4.8	14	8	1	22	sw.	L. S. & M. S. R. R.
Concord	Jackson	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. N. Armstrong.
Croton	Newaygo	685	5	26.6	.....	52	17	1	9†	27	1.15	.....	0.60	11.5	4	2	10	19	sw.	Gr. Rap. Musk. Power Co.
Detroit	Wayne	730	42	30.3	+ 6.0	54	17	12	13	33	3.95	+ 1.97	0.86	8.0	16	5	5	21	sw.	U. S. Weather Bureau.
Durand	Shiawassee	799	5	28.2[a]	.....	.....	.....	3[a]	9	38[a]	.....	.....	.....	.....	.....	12[a]	10[a]	8[a]	nw.	H. J. Tobin.
East Tawas	Iosco	590	16	25.5	+ 4.1	49	17	− 4	9	32	1.30	− 0.48	0.50	.....	6	10	6	15	sw.	Detroit & Mackinaw Ry.
Eloise	Wayne	640	16	30.4	+ 5.8	49	18	9	9†	26	4.08	+ 2.02	1.09	6.1	15	10	5	16	w.	John Gilmore.
Flint	Genesee	730	24	27.8	+ 5.9	53	17	2	13	24	1.57	− 0.19	0.55	10.5	9	4	8	19	w.	William L. Fisher.
Frankfort	Benzie	589	9	26.3	.....	40	16†	9	12	20	2.10	+ 0.24	0.50	2.0	10	.....	.....	.....	sw.	Geo. Morency.
Ganges	Allegan	665	4	28.4	.....	52	17	9	29	29	1.17	.....	0.27	5.5	8	5	4	22	sw.	H. H. Hutchins.
Gaylord	Otsego	1,367	13	19.4	+ 2.3	44	17	− 5	9	30	1.32	− 0.54	0.27	.....	11	3	0	28	sw.	Michigan Central R. R.
Gladwin	Gladwin	794	17	24.6	+ 4.4	49	17	− 5	9	30	2.00	+ 0.19	1.10	9.0	5	19	3	9	w.	Geo. R. Smith.
Grand Haven	Ottawa	628	32	28.0	+ 3.5	49	16	12	28	22	1.72	− 1.08	0.52	11.0	17	3	6	22	s.	U. S. Weather Bureau.
Grand Rapids	Kent	707	24	28.2	+ 4.4	54	17	13	21	28	1.86	− 0.92	0.47	13.1	16	3	5	23	s.	Do.
Grape	Monroe	625	23	29.8	+ 4.3	49	20	5	13	23	3.92	+ 2.28	0.98	4.4	16	5	8	18	w.	Joseph W. Morris.
Grass Lake	Jackson	989	7	28.1	.....	45	17†	7	9†	28	3.72	.....	1.05	7.0	17*	7	9*	28	sw.	Menzo Conklin.
Grayling	Crawford	1,147	23	21.9	+ 4.6	48	17	− 5	29	30	1.68	− 0.55	0.45	4.7	12	2	5	24	w.	S. N. Insley.
Greenville	Montcalm	802	1	25.7[c]	.....	54[b]	17	6[d]	9†	30[d]	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Pickle Co.
Harbor Beach	Huron	635	25	26.5	+ 4.0	50	17	1	13	25	3.40	+ 1.53	1.00	24.0	7	3	11	17	sw.	Pere Marquette R. R.
Harrison	Clare	1,159	20	24.8	+ 5.6	49	17	− 1	28	37	.....	.....	.....	.....	.....	6	6	19	s.	Do.
Harrisville	Alcona	616	29	24.2	+ 4.5	48	17	− 4	13	34	1.83	− 0.93	0.50	16.1	10	5	12	14	sw.	D. W. Mitchell.
Hart	Oceana	698	21	27.7	+ 5.4	50	17	3	9†	30	2.10	− 0.70	0.40	14.0	9	4	13	14	sw.	Pere Marquette R. R.
Hayes	Huron	620	23	26.2	+ 4.1	52	17	− 3	9	27	2.09	− 0.09	0.97	8.0	5	4	4	23	sw.	C. F. Leipprandt.
Highland	Oakland	1,006	21	.....	.....	.....	.....	.....	.....	.....	3.86	+ 1.56	0.91	.....	9	.....	.....	.....	.....	A. D. DeGarmo.
Hillsdale	Hillsdale	1,150	16	28.8	+ 4.7	52	17	7	13	29	3.74	+ 1.74	0.95	2.8	13	7	3	21	sw.	C. L. Herron.
Holland	Ottawa	610	7	28.5	.....	53	17	10	21	32	1.75	.....	0.39	12.1	14	6	8	17	s.	City of Holland.
Houghton Lake	Roscommon	.....	0	24.2	.....	51	17	− 1	13	40	0.72	.....	0.42	.....	6	7	5	19	nw.	Frank Sharp.
Howell	Livingston	924	21	28.8	+ 6.7	52	17	3	13	28	4.57	+ 2.84	1.15	4.9	12	11	6	14	sw.	O. L. Giddings.
Ivan	Kalkaska	.....	24	22.2	+ 3.4	46	17	− 8	13	31	1.49	− 0.68	0.40	17.5	10	1	8	22	sw.	City of Jackson.
Jackson	Jackson	927	16	29.7	+ 5.3	60	19	7	13	36	4.39	+ 2.39	1.25	3.9	12	17	3	11	sw.	William Bice.
Jeddo	St. Clair	667	24	26.7	+ 4.6	48	17	− 2	9†	28	2.15	+ 0.31	0.45	12.5	12	5	6	20	sw.	Alex Becker.
Johannesburg	Otsego	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kalamazoo	Kalamazoo	955	37	27.1	+ 3.5	53	17	4	9†	33	2.30	+ 0.03	0.75	.....	6	6	4	21	sw.	Kalamazoo Asylum.
Lansing (Agri. College)	Ingham	863	49	26.2	+ 3.5	52	17	1	13	30	3.10	+ 0.01	0.95	18.7	17	5	4	22	sw.	U. S. Weather Bureau.
Lansing (capital)	do.	881	26	27.0	+ 4.2	53	17	6	13	28	3.17	+ 1.11	0.58	17.3	15	5	2	24	sw.	State Board of Health.
Lapeer	Lapeer	827	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Home.
Ludington	Mason	586	15	26.6	+ 2.3	47	16	9	12	23	1.81	− 0.46	0.66	13.2	15	1	5	25	s.	Pere Marquette R. R.
Luther	Lake	1,028	3	23.2	.....	49	17	− 5	24	37	2.03	.....	0.61	16.0	13	3	4	24	sw.	John W. Nichoson.
Mackinaw	Cheboygan	592	22	22.6	+ 5.2	48	18	2	14	33	.....	.....	.....	.....	.....	2	0	29	sw.	G. R. & I. Ry.
Mancelona	Antrim	1,121	17	21.2	+ 2.2	45	17	0	13	30	.....	.....	.....	.....	.....	7	0	24	w.	Do.
Manistee	Manistee	600	16	27.5	+ 3.8	52	17	6	12†	33	.....	.....	.....	.....	.....	2	1	28	nw.	Pere Marquette R. R.
Marshall	Calhoun	896	1	29.4[d]	.....	52[d]	16†	1[c]	12	36[c]	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. B. Stuart.
Midland	Midland	604	14	27.2	+ 4.0	50	17	1	13	25	0.50	− 0.97	0.30	5.0	3	6	1	24	se.	Pere Marquette R. R.
Morenci	Lenawee	811	6	30.6	.....	53	17	6	9	26	4.33	.....	1.10	5.6	16	6	3	22	nw.	George J. Tripp.
Mount Clemens	Macomb	615	13	30.0	+ 5.7	53	17	4	13†	36	4.02	+ 2.32	1.00	7.8	9	9	0	22	sw.	Waterworks.
Mount Pleasant	Isabella	826	14	24.0	+ 2.8	41	1†	2	12	30	.....	.....	.....	.....	.....	10	11	10	w.	Pere Marquette R. R.
Muskegon	Muskegon	587	17	28.0	+ 4.7	46	17	11	12†	27	0.99	− 1.68	0.30	8.3	12	4	22	5	.....	G. R. & I. Ry.
Old Mission	Grand Traverse	858	19	23.9[c]	+ 1.7	48[c]	17	5[c]	13	27[c]	1.97	− 0.11	0.40	18.9	13	3[c]	7[c]	18[c]	nw.	E. O. Ladd.
Olivet	Eaton	934	23	28.1	+ 5.1	51	17†	6	9	32	2.66	+ 0.49	0.84	10.9	11	12	2	17	s.	G. A. Knapp.
Omer	Arenac	616	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	6	16	nw.	Detroit & Mackinaw Ry.
Onaway	Presque Isle	826	10	20.1	+ 2.8	48	19	− 11	9	35	2.30	− 1.15	0.60	23.0	5	2	9	20	s.	Do.
Owosso	Shiawassee	731	16	28.2	+ 6.6	48	20	1	13	27	2.32	− 0.39	0.80	17.1	10	3	11	17	sw.	Owosso Sugar Co.
Petoskey	Emmet	660	23	24.4	+ 5.2	48	17	5	14	31	1.72	− 0.57	0.40	17.2	8	4	1	26	w.	G. R. & I. Ry.
Plymouth	Wayne	725	16	29.6	+ 5.2	51	17	9	9†	23	3.55	+ 1.66	1.12	5.5	13	12	10	9	sw.	Pere Marquette R. R.
Pontiac	Oakland	935	13	27.6	+ 2.1	50	17	3	13	24	3.32	+ 1.25	0.87	10.0	10	5	7	19	s.	Fred W. Shaw.
Port Austin	Huron	618	16	36.4	+ 4.3	52	17	1	9	30	1.75	− 0.14	0.42	10.0	8	10	10	11	sw.	Pere Marquette R. R.
Port Huron	St. Clair	639	38	28.1	+ 6.3	52	17	5	9	31	3.08	+ 1.19	0.68	8.8	17	3	7	21	sw.	U. S. Weather Bureau.
Reed City	Osceola	1,033	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	8	23	sw.	Pere Marquette R. R.
Roscommon	Roscommon	1,141	12	20.6[a]	+ 2.5	37[a]	15†	− 3[a]	9†	30[a]	1.17	− 0.71	0.45	11.7	7	0[a]	15[a]	15[c]	w.	Marcus Schaaf.
Saginaw, east side	Saginaw	601	11	29.7	+ 6.5	52	17	6	13	32	2.18	− 0.65	0.52	18.5	10	11	11	9	s.	Postmaster.
Saginaw, west side	do.	601	18	26.8	+ 5.6	53	17	6	13	28	1.85	− 0.59	0.59	13.5	11	2	7	22	s.	U. S. Weather Bureau.
St. James	Charlevoix	681	7	23.3	.....	46	17	4	14	26	1.96	.....	0.80	19.0	10	2	10	19	nw.	James Malone.
St. Joseph	Berrien	593	26	29.4	+ 2.8	55	17	9	13	24	2.46	0.0	0.50	9.6	13	7	0	24	sw.	City of St. Joseph.
Sandusky	Sanilac	790	4	25.9	.....	50	17	− 4	13	35	2.02	.....	0.70	9.0	6	9	3	19	s.	Pere Marquette R. R.
Saranac	Ionia	639	18	26.9	+ 4.2	58	17	1	21	30	1.67	− 0.62	0.47	10.5	9	6	1	24	sw.	John Wallington.
South Haven	Van Buren	585	17	29.4	+ 4.0	44	16†	10	9	18	3.45	+ 1.39	0.60	5.5	14	9	14	8	sw.	Mrs. M. E. De Diemar.
Thornville	Lapeer	975	36	28.0	+ 5.1	47	17	0	14	32	2.85	− 0.70	0.40	19.0	11	1	3	27	sw.	J. S. Caulkins.
Traverse City	Grand Traverse	588	16	26.3	+ 3.9	42	1	4	10	23	1.45	− 0.97	0.70	14.5	6	4	1	26	nw.	G. R. & I. Ry.
Vassar	Tuscola	641	12	27.6[a]	+ 5.1	53[a]	17	− 4[a]	9	27[a]	2.36	+ 0.04	0.70	16.0	7	7[a]	5[a]	18[a]	sw.	Pere Marquette R. R.
Wasepi	St. Joseph	842	16	28.7	+ 5.1	53	17	6	13	32	5.31	+ 2.77	2.50	2.0	9	7	0	24	sw.	Charles A. Palmer.
West Branch	Ogemaw	937	8	21.1	.....	48	17	− 11	9	44	0.95	.....	0.45	9.5	5	5	1	25	sw.	Michigan Central R. R.
Ypsilanti	Washtenaw	736	28	28.4	+ 3.5	50	17	6	9	25	4.31	+ 2.20	1.12	2.3	11	1	23	7	sw.	Orin J. Bemiss.

TABLE 1.—*Climatological data for January, 1913. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Ohio.																				
Akron	Summit	1,081	26	34.2	+ 6.7	57	21	13	5	37	5.86	+ 3.28	0.98	11.3	15	5	3	24	s.	Prof. C. R. Olin.
Antwerp	Paulding	733	1	31.7	.....	55	18	8	13	29	6.74	.....	1.55	6.0	12	7	0	24	nw.	North G. Osborn.
Benton Ridge	Hancock	800	20	32.6	+ 5.4	58	20	7	9	30	7.35	+ 4.54	0.80	13.5	18	5	5	21	sw.	J. W. Powell.
Bowling Green	Wood	670	32	31.8	+ 5.9	55	17†	3	9	27	6.67	+ 4.04	1.10	10.0	18	6	9	16	sw.	G. C. Housekeeper.
Bucyrus	Crawford	1,000	19	32.8	+ 6.2	57	20	7	9	28	5.83	+ 3.08	1.55	24.0	16	8	3	20	s.	James R. Hopley.
Cleveland (1)	Cuyahoga	762	42	35.4	+ 9.2	59	20	14	9	32	5.66	+ 3.21	1.18	6.2	19	5	6	20	s.	U. S. Weather Bureau.
Cleveland (2)	do	754	16	34.6	+ 7.0	58	20	15	9	33	5.30	+ 2.63	0.75	8.2	16	8	3	20	se.	Rev. F. L. Odenbach, S. J.
Conneaut	Ashtabula	675	3	35.0	.....	59	20	14	9	35	6.33	.....	1.01	3.7	13	3	7	21	sw.	E. L. Ransom.
Findlay	Hancock	776	24	33.3	+ 6.4	58	20	4	5†	30	7.02	+ 4.49	1.10	13.0	14	8	10	13	sw.	Dr. E. A. Moser.
Fremont	Sandusky	628	11	33.8	+ 4.8	56	17†	9	9	24	6.62	+ 4.04	1.04	9.7	13	11	1	19	sw.	E. Stanley Thomas.
Hedges	Paulding	725	19	31.8	+ 5.4	55	17†	6	5	26	7.19	+ 4.53	1.25	8.8	11	9	3	19	s.	Charles Stutzman.
Hillhouse	Lake	997	20	32.8	+ 7.5	56	20	10	9	30	6.59	+ 3.69	1.11	8.5	13	5	6	20	s.	J. W. Doncaster.
Hiram	Portage	1,260	33	34.4	+ 9.4	56	20	12	9†	35	4.69	+ 1.90	0.71	11.5	17	8	4	19	sw.	Prof. G. H. Colton.
Hudson	Summit	1,123	52	33.6	+ 7.6	56	11†	10	5†	25	5.50	+ 2.93	1.02	9.8	13	7	7	17	se.	Dr. W. I. Chamberlain.
Lima	Allen	875	14	33.4	+ 6.1	55	17†	10	9	27	7.67	+ 4.43	1.30	12.0	16	12	1	18	nw.	Miss Ollie De Long.
Medina	Medina	944	25	33.6	+ 7.3	57	20	6	5	33	6.25	+ 3.61	0.91	6.0	17	10	0	21	s.	F. W. Clark.
Montpelier	Williams	880	21	30.8	+ 7.5	54	17	9	21	29	4.93	+ 2.78	1.30	8.1	16	4	4	23	w.	G. L. Laser.
Napoleon	Henry	680	26	30.3	+ 3.9	55	16†	4	31	38	5.13	+ 3.02	0.93	6.0	12	8	2	21	nw.	A. C. Senter.
New Bremen	Auglaize	1,038	20	33.8	+ 6.1	57	20	10	4	26	6.21	+ 3.84	1.41	8.5	15	10	5	16	sw.	Miss Lillian Grothaus.
North Royalton	Cuyahoga	1,000	20	34.4	+ 8.6	57	17	7	9	30	6.73	+ 3.69	1.07	12.0	15	6	11	14	sw.	W. S. Edgerton.
Norwalk	Huron	719	27	34.8	+ 7.9	62	20	5	5	29	6.60	+ 4.08	0.97	11.0	18	5	10	16	w.	Giles R. Gregory.
Oberlin	Lorain	855	38	33.9	+ 8.0	58	20	5	9	27	6.44	+ 4.12	1.03	14.0	18	10	4	17	s.	Prof. F. F. Jewett.
Ottawa	Putman	720	20	33.5	+ 6.3	65	17	8	5†	26	5.31	+ 2.77	1.03	.....	17	3	11	17	sw.	Prof. J. T. Maidlow.
Sandusky	Erie	629	36	34.3	+ 8.0	58	20	11	9	34	6.10	+ 4.00	1.03	10.7	16	3	4	24	se.	U. S. Weather Bureau.
Tiffin	Seneca	775	31	34.0	+ 6.6	56	17†	7	9	29	8.52	+ 5.89	1.15	21.5	19	10	4	17	sw.	Prof. T. H. Sonnedecker.
Toledo	Lucas	769	42	32.0	+ 6.4	57	17	11	9	35	6.63	+ 4.71	1.37	5.8	17	6	5	20	sw.	U. S. Weather Bureau.
Upper Sandusky	Wyandot	854	30	33.0	+ 6.2	57	20	7	9	27	7.18	+ 4.58	1.40	12.0	16	3	8	20	sw.	Robert E. Tracht.
Vickery	Sandusky	588	20	32.8	+ 6.1	58	20	6	9	29	6.71	+ 4.30	0.97	8.4	17	5	6	20	sw.	John W. Barr.
Wapakoneta	Auglaize	898	1	33.0	.....	56	20	6	5	24	7.53	.....	1.11	16.0	19	7	7	17	s.	Dr. William Kayser.
Wauseon	Fulton	780	41	29.9	+ 6.3	54	17	5	9†	31	5.84	+ 3.46	1.33	10.4	19	2	12	17	s.	Thomas Mikesell.
Wickliffe	Lake	740	1	.....	.....	.....	.....	.....	.....	.....	5.99	.....	1.27	5.5	15	9	3	19	s.	C. M. Richardson.
Pennsylvania.																				
Erie	Erie	658	40	35.9	+9.4	59	20	20	9	30	5.60	+ 2.57	1.13	4.1	17	4	6	21	s.	U. S. Weather Bureau.
New York.																				
Adams Center	Jefferson	540	22	32.0	+10.4	54	17	— 7	9	31	6.39	+ 2.29	0.86	23.5	21	12	5	14	s.	A. E. Cooley.
Angelica	Allegany	1,340	30	32.2	+ 9.3	54	17	3	9	35	4.00	+ 1.32	0.77	6.0	16	2	7	22	sw.	Prof. P. Arnold.
Appleton	Niagara	270	22	33.0	+ 6.7	58	20	11	13	29	4.93	+ 2.25	0.90	T.	11	5	6	20	sw.	H. A. Van Wagoner.
Auburn	Cayuga	715	44	33.6	+ 9.5	55	17†	5	9	33	5.86	+ 3.31	2.00	11.0	10	8	10	13	s.	A. H. Underwood.
Avon	Livingston	585	18	.....	.....	.....	57	17	9	13	....	2.81	+ 0.97	0.60	4.0	13	2	9	20	.....	W. G Markham.
Brockport	Monroe	537	17	33.0	+ 9.2	54	17†	8	9	28	4.70	+ 1.79	0.76	13.0	18	2	14	15	s.	W. H. Lennon.
Buffalo	Erie	767	62	33.8	+ 9.1	56	20	13	13	26	5.56	+ 2.26	0.98	7.0	15	4	7	20	sw.	U. S. Weather Bureau.
Canton	St. Lawrence	448	19	26.8	+10.5	54	31	— 11	9	43	4.93	+ 1.77	1.18	16.3	17	4	8	19	sw.	Do.
Cape Vincent	Jefferson	246	8	.....	.....	.....	.....	.....	.....	.....	5.55	.....	1.20	.....	11	6	9	16	w.	J. Harry Grapotte.
Chazy	Clinton	151	13	26.7	+10.9	48	19†	— 12	9	33	1.50	— 0.22	0.40	12.5	7	10	7	14	s.	W. R. North.
Chestnut Lawn	Wyoming	1,090	1	32.9	.....	56	17	3	13	31	5.25	.....	1.10	9.0	14	11	6	14	sw.	Charles Peterson.
Dannemora	Clinton	1,490	8	26.2	.....	49	13†	— 8	13	37	3.68	.....	0.80	10.0	14	3	6	22	w.	Dr. W. N. Thayer.
Elba	Genesee	500	14	30.5	+ 6.8	56	17	6	9†	41	5.21	+ 1.94	1.10	16.0	13	11	4	16	sw.	Joseph S. Wilford.
Fayetteville	Onondaga	530	12	34.0	+10.2	56	17†	— 2	9	28	3.61	+ 1.40	0.80	4.0	15	4	9	18	se.	Dana H. Wells.
Gabriels	Franklin	1,729	11	24.4	.....	51	31	— 17	13	36	5.45	.....	0.77	12.5	21	5	6	20	sw.	Gabriels Sanatarium.
Harkness	Clinton	622	11	27.8	+ 9.6	55	17†	— 11	13	35	2.06	+ 0.65	0.50	5.5	9	22	1	8	w.	J. W. Harkness.
Hemlock Lake	Livingston	900	15	.....	.....	.....	.....	11	13	....	3.52	+ 1.92	.....	9.5	....	10	10	11	s.	Bernard P. McGrady.
Hunt	do	1,321	14	34.6	+10.4	56	17	9	9†	26	5.66	+ 3.01	1.55	12.0	8	5	11	15	sw.	W. S. Barager.
Ithaca	Tompkins	928	35	34.7	+10.6	55	8	9	13	38	3.15	+ 0.99	1.44	2.1	12	2	9	20	se.	U. S. Weather Bureau.
Keene Valley	Essex	1,000	15	29.0	+10.6	52	31	— 3	9	35	5.25	+ 2.18	0.63	11.8	15	13	7	11	nw.	E. R. Wells.
King Ferry	Cayuga	.....	13	.....	.....	.....	.....	.....	.....	.....	3.14	+ 0.89	1.50	2.5	11	3	12	16	se.	Lucius A. Goodyear.
Lake George	Warren	350	16	31.6	+13.1	50	17†	4	9	30	4.06	+ 0.98	0.92	6.9	13	5	12	14	s.	Charles Forsell.
Lake Placid Club	Essex	1,864	5	21.3	.....	46	31	— 11	13	34	7.36	.....	1.21	21.2	22	8	10	13	nw.	Henry van Hoevenberg.
Lauterbrunnen	Wyoming	.....	1	33.2	.....	55	17	7	13	32	5.30	.....	0.91	13.8	15	4	11	16	sw.	James O. Howard.
Lockport	Niagara	520	26	32.2	+ 7.1	58	20	9	9	28	4.28	+ 1.79	0.55	7.0	11	4	13	14	sw.	Robert N. Clark.
Lowville	Lewis	900	46	30.0	+11.3	50	18†	— 1	9	33	5.09	+ 2.30	0.71	21.5	19	3	21	7	sw.	Prof. W. F. H. Breeze.
Moira	Franklin	200	13	26.2	+10.9	56	31	— 14	13	41	4.68	+ 1.80	1.75	20.0	14	8	9	14	w.	C. E. McBride.
Nehasane	Hamilton	1,750	5	23.9	.....	50	31	— 15	9	39	7.94	.....	1.02	32.5	24	6	13	12	s.	L. W. Brown.
North Lake	Herkimer	1,822	12	26.0	.....	48	3	— 7	9	38	8.30	.....	1.16	11.5	16	11	4	16	sw.	John F. Redmond.
Ogdensburg	St. Lawrence	175	29	.....	.....	.....	52	31	.....	.....	.....	3.99	+ 1.84	0.92	20.1	11	1	17	13	se.	State Hospital.
Old Forge	Herkimer	1,733	4	25.8	.....	48	31	— 10	9	38	7.83	.....	1.10	18.8	22	10	5	16	w.	Mrs. S. W. Nelson.
Oswego	Oswego	335	43	32.0	+ 8.1	56	17	5	9	26	4.45	+ 1.29	1.45	7.2	16	2	3	26	s.	U. S. Weather Bureau
Otto	Cattaraugus	1,410	9	.....	.....	.....	.....	2	9	....	3.62	.....	0.86	.....	14	10	12	9	.....	William J. Winke.
Palermo	Oswego	460	54	.....	.....	.....	.....	.....	.....	.....	4.10	+ 0.84	1.01	9.7	16	12	6	13	s.	E. B. Bartlett.
Perry City	Schuyler	1,038	33	30.2	+ 7.6	54	17	— 1	13	28	3.10	+ 0.31	1.25	1.3	13	2	9	20	sw.	W. H. Jeffers.
Philadelphia	Jefferson	485	7	29.5	.....	54	17†	— 12	9	34	4.08	.....	0.53	13.0	17	2	16	13	se.	E. D. Babcock.
Potsdam	St. Lawrence	300	37	26.8	+ 9.2	52	17†	— 9	9†	38	4.78	+ 2.84	1.16	.....	13	.....	.....	.....	.....	A. E. Sutherland.
Ranger School	do	1,750	0	27.2	.....	53	31	— 9	9	40	6.53	.....	1.00	33.2	21	8	12	11	sw.	Prof. P. T. Coolidge.
Raquette Lake	Hamilton	1,776	5	25.8	.....	47	31	— 10	9	39	6.52	.....	0.77	20.3	20	6	5	20	s.	R. J. Dunning.
Rochester	Monroe	523	84	33.6	+ 9.6	56	17	13	9	27	4.86	+ 1.73	1.80	10.0	15	3	5	23	w.	U. S. Weather Bureau.
Romulus	Seneca	719	21	33 9	+ 9.1	56	26	9	9†	30	2.66	+ 0.44	1.73	4.0	6	5	11	15	s.	John H. Coryell.
Shortsville	Ontario	740	14	33.8	+ 9.1	57	17	7	13	29	.....	.....	.....	4.7	....	8	7	16	s.	C. H. Latting.
Skaneateles	Onondaga	.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Edward Conron.
Syracuse	do	597	11	33 8	+10.8	56	17	4	9	30	3.80	+ 1.66	1.24	7.7	16	4	6	21	s.	U. S. Weather Bureau.
Tupper Lake	Franklin	1,522	13	25 6	+10.2	50	18†	— 14	13†	39	3.38	+ 0.96	0.55	19.0	18	6	7	18	s.	Rev. A. W. Maddox.
Volusia	Chautauqua	1,167	14	32.1	+ 7.4	54	21	12	9	28	5.54	+ 2.53	0.83	10.0	12	4	12	15	s.	Benjamin Breads.
Wanakena	St. Lawrence	1,600	3	.....	.....	.....	.....	— 12	9	....	6.81	.....	0.96	33.2	21	8	11	12	sw.	Prof. P. T. Coolidge.
Watertown	Jefferson	540	21	31.5	+11.2	55	17	— 4	9	28	4.86	+ 1.88	0.92	16.0	18	7	3	21	s.	H. P. Dunlap.
Wedgwood	Schuyler	1,430	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. F. Corwin.
Westfield	Chautauqua	837	17	.....	.....	.....	.....	15	9	....	7.40	+ 4.85	0.98	3.0	14	9	11	11	.....	John R. Rogers
York	Livingston	760	1	33.7	.....	57	17	7	9†	32	4.40	.....	0.92	9.7	16	4	5	22	s.	M. N. Stewart.
Youngston	Niagara	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. V. Brookins.
Vermont.																				
Burlington	Chittenden	404	5	27.8	+11.5	52	3	— 6	13	38	2 38	+ 0.55	0.76	10.8	13	7	7	17	s.	U. S. Weather Bureau.
Cornwall	Addison	517	19	29.8	+10.5	64	3	0	13	32	2.15	— 0.53	0.70	5.0	9	5	11	15	s.	C. H. Lane.
Enosburg Falls	Franklin	601	21	26.6	+10.5	55	3	— 20	13	38	3.88	+ 1.21	0.97	13.0	14	8	9	14	nw.	L. H. Pomeroy.
Hyde Park	Lamoille	576	1	25.1	.....	50	4	— 13	13	42	3.82	.....	0.65	21.0	14	4	13	14	w.	A. V. Wiswell.
Northfield	Washington	876	26	27.0	+11.9	54	17	— 4	13	45	2.84	+ 0.35	0.51	7.8	16	6	6	19	s.	U. S. Weather Bureau.
Wells	Rutland	750	20	31.2	+13.0	58	23	1	13	30	3.75	+ 1.06	0.80	3.0	12	7	11	13	s.	E. R. Pember.

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 4, Lake Region.*

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Minnesota.																																	
Cloquet	L. Superior		T.								.02			.12				T.										.28				0.42
Duluth	do		.05	T.							.03		.02	.06	T.	T.	.02	.03				T.	.01			.04	T.		.16	.04	.23	.06	0.75
Floodwood	do																													.34	.12		0.46
Stephens Mine	do																	T.		T.			T.			.04	T.			.20	.05		0.29
Two Harbors	do											.04		.03								T.	T.			T.			.08	.04	T.	0.19
Virginia	do		T.									.04		.03				.07											T.	.12	.03	.04	0.33
Wisconsin.																																	
Appleton	Fox		.01	.01	T.	.19	.04	.55	.06			T.		T.					.03					.23			.18			.07	T.	.11	1.48
Ashland	L. Superior		T.	T.				T.			T.	T.		.03					.10			T.				.01			.03	.36	.06	0.59
Bayfield	do		T.	T.				T.			T.	T.		T.					.10			T.				T.			*	*	.22	0.32
Cecil	Fox		.03	T.		.12	.04	.08	.12			T.							.02					T.			.05			.03	.08	.08	0.65
Cornucopia	L. Superior																																
Crandon	Fox			T.	T.			.05											T.							.05					.25	.30	0.65
Florence	Menominee						.10										T.	1.07								.10			.10				1.47
Fond du Lac	Fox		T.	T.		.30	T.	.16						T.			T.		.02				1.33			.12			.40	T.	.33	2.66
Grand River Locks	do			T.		.06	.01	.06	T.					T.			T.		.03				.58			.12	T.		.04		.06	0.96
Green Bay	L. Michigan		.04	.05		.20	.02	.30				T.		T.			T.		T.			T.	.16		T.	.15			.02	.14	.08	1.17
High Falls	do			.02	T.	.10	.20	.15	.10					.01			T.	.50	.03							.03	.10			.10	.15	.12	1.04
Iron River	L. Superior	*	T.	.10							T.	.05		.10	.20				.05			.05					T.		.20	.20	.50	.20	1.45
Kewaunee	L. Michigan		.11	.10		.20		.50				T.										T.		.45			.20			T.	.10	.10	1.76
Manitowoc	do	.09		.06		.16		.47			.01			T.					.02					.51			.11			.02		.06	1.51
Menasha	Fox		T.	.02		.11		.12						T.			T.		.02					.13			.19			T.	.02	.14	0.75
Menomonee Falls	L. Michigan			.02		.05	.04	.52						T.					.03		T.			.32			T.		.04	.02		.03	1.07
Milwaukee	do		T.	.01		.16	.11	.44		T.	T.	T.		T.			T.		.03		T.		.06	.17			.01	.05		.02	.01	T.	1.07
New London	Fox			T.		.12		.08				T.							T.					.01			T.			T.	.41	.04	0.66
Oconto	L. Michigan	.07				.40	*	.20									.10									.05	.20		.05		.30	.30	1.67
Oshkosh	Fox			T.		T.	.30	.40									T.							.40			T.					.10	1.20
Pine River	do		T.	.02		.11	T.	.16	.04			T.		T.	T.		T.	T.	.02					.13			.15			.01	.01	.21	0.86
Plum Island	L. Michigan		.08	T.		.13	*	.20	.10			T.		T.					T.					T.		.10	.30			.12	T.	.29	1.32
Plymouth	do		.08	T.		*	.23	*	.35										T.		T.			.54			.03			.03		.05	1.31
Port Washington	do						.20	.80										.30						.05									1.35
Racine	do			T.			.18	.48	.03			T.					T.		T.		T.			.18			T.	T.	.08	.02		T.	0.97
Ripon	Fox			.03		.28	.08	.27	.08	T.		T.		T.	T.				.01					.40			.13			.04		.07	1.39
Sheboygan	L. Michigan		T.	.05		T.	.20	.40	.60					T.			T.		T.		T.			.80						T.		T.	2.05
Sturgeon Bay	do		.10				.23	.38									T.	.07	T.					.14		T.	.13			.07	T.	.18	1.30
Superior	L. Superior			.02										.04				.02						T.		.02	T.			.04	.02	.01	0.17
Waupaca	Fox		.02			.11	.04	.12	.07										T.					.11			.09			.06	.08	.16	0.86
Illinois.																																	
Chicago	L. Michigan		T.	T.		.03	.21	.12	T.	T	.04	T.				T.	.01		.06	.01	.29		.10	.24			T.	.07	.11	.03	T.	.01	1.33
Evanston	do																																
Highland Park	do		T.			.05	.25	.50				T.							.15		.02			.35			T.	.04	.04	.06			1.46
Indiana.																																	
Auburn	Maumee					T.	.80	T.	.66			.49	.08				.17	.30	.78		T.	.10		.43					.04		T.	.11	3.96
Berne	do		.16	.32	.12	.37	.56	1.24	.01		.24	.78	.22			.04	.59	.43	.08		1.33	T.		.54					.17	T.		.08	7.28
Fort Wayne	do		.04	.01	.04	.30	.02	.49	T.		.26	.37	T.			.01	.39	1.27	.23		1.10		.02	.39				.08	.45	.02	T.	.05	5.54
Hammond	L. Michigan																																
Howe	St. Joseph		.18		T.		.20	.05	.10							.20		.63			1.23	.10									.15	.33	3.17
Notre Dame	do			.09	T.	.25	.26	.27	T.		.11	.05	.08			.02	.09	.08	.12	.05	.96			.29			T.	.03	.02	T.	.02	.04	2.83
Whiting	L. Michigan			T.		.01	T.	.73	.12		.04					*	.19		T.	.48							T.	.10	.01		T.	1.68
Michigan—Upper Peninsula.																																	
Baraga	L. Superior																																
Bergland	Ontonagon			.28	.10		T.	T.				T.	.10	.13					.13			T.	T.		T.	T.	T.	T.		T.		.40	1.14
Blaney	Manistique																																
Calumet	L. Superior			.24	.32	.24	.08	T.	.04	T.	T.	.32	.16	.08				.04	.20		T.	.16	.08	T.	.12	T.	T.	.04		T.	.02	.18	2.32
Chatham	do		T.	.30			.50	.10	.10					.20					.20		.10										.80	2.30
Deer Park	do				.20		T.		.10				T.			.10					T.					.20	.20	.10			.20	1.10
Detour	St. Marys																																
Eagle Harbor	L. Superior																																
Escanaba	Lake Mich		.04	.02	T.	.12	T.	.04				T.		.04		T.	.04		.01					T.		.06	.04		T.	.12	.22	.07	0.82
Ewen	Ontonagon		.10	.40	.10						T.	.10		.21					.20			.22	.05	T.	T.	.06	.10	T.	T.		.20	.62	2.36
Grand Marais	L. Superior	.20			T.	.10	.30					.10	.20	.30	.15			.10	.10		.30	.10	.10	.05	.10		.20	.20		.20		.20	3.00
Green	do																																
Houghton	do		T.	.06	.05	.02	.02		T.		T.	.14	.15	.02		T.	T.	.03	.01		.02	.06	T.	T.	.02	.02	.03	.02	T.	.03	.42	.50	1.62
Humboldt	Escanaba			.01				T.														.10					T.				T.	.30	0.41
Iron Mountain	Menominee		T.	.05			.07	.08	.01					.06					.03							.06	.03			.08	.06	.12	0.65
Iron River	do			.20		T.	T.	T.						T.			.10	.30	.10							T.					.10	.40	1.20
Ironwood	L. Superior		T.	.10							T.	T.	T.	T.				T.	T.			T.	.09		T.		.21				.17	.81	1.38
Ishpeming	Escanaba			.05	T.		.02	.02	.03		T.	.01		.05				T.	.05		T.	T.	T.	.01			.01	.05		.05	.05	.40	0.80
Isle Royale	L. Superior																																
Mackinac Island	Lake Huron		T.	T.		.60	T.		.15					T.	T.			.42			T.	.05			T.	.15	.05		T.	T.			1.42
Maple Ridge	Lake Mich			.20				.20																			20	.10			.20		1.10
Marquette	L. Superior		.02	.30	.01	.03	.23	.17	.02		T.	.01		.05					.09		T.	.01		T.	T.	.03	.05	.03	.05	.03	.26	.64	2.03
Menominee	Menominee					.38	T.	.20									.10										.18			.10	.25	.08	1.29
Munising	L. Superior		.10	.06	.29		.16	.04	.08			.10	.05	.12					.35		.02						.05	.12	.25	.02	.12	.04	.51	2.48
Newberry	Tequamenon		.13	.05	.09	.10	.06	T.	.10			.03	.04	.12	T.			.03	.02		T.	.05		.01		.06	.10	.06	.03	.15	.12	.21	1.06
Powers	Lake Mich																																
St. Ignace	Lake Huron		.30	.01	.01		.60		.40			.01		.01		T.	T.	.01						.20					.10	.10		.20	1.95
Sault Ste. Marie	St. Marys		.26	.01	.10	.11	.01	.02				.03	.01	.04		T.			T.		.01	.04		.12	T.	.04	.05	.09	.02	.15	.13	.07	1.31
Seney	Manistique		.04		.60	.05	.05																				.10	.30		.30	.10	.20	1.74
Thomaston	L. Superior			.40			.20																										
Victoria	Ontonagon		T.	.20	.40			T.					.15									.15		.05	T.		.10				.15	.50	1.70
Watersmeet	do	T.		.20	T.		.07	T.			T.	.06		.06	T.				.14			.05	T.			.02	.03			.03	.03	.15	0.84
Whitefish Point	L. Superior		.23	.04	.11	.10			.09	.05			.18					.09					.36		T.	.16	.06	.32	.05	.28		.28	2.40
Michigan—Lower Peninsula.																																	
Adrian	Raisin			.19		T.	.48	.88	.30		.03	.36	.11				.05	.23	.11		.12			T.					T.	T.		.05	2.91
Allegan	Kalamazoo			.10	.10		T.	.40	.20			.14				.02	T.		.50		.14			.27				T.		T.		.10	1.97
Alma	Saginaw			T.	T.	T.	T.	.62	.08							T.	.08	.12	.40		.42			.17				T.			.08	1.97
Alpena	Lake Huron			.13	T.	.08	.01	.25	.03		.14	T.	T.	T.	T.	.02	.03		T.		.06			.49		.02	.12	.01	T.	.01	.09	.04	1.53
Ann Arbor	Huron			.02	T.	T.	.50	.25	.03		T.	.32	.02			.02	.09	.17	.02		1.01	.05		.43						.02		.07	3.02

TABLE 2.—*Daily precipitation for January, 1913. District No. 4*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Michigan—Lower Peninsula—Con.																															
Arbela	Saginaw			.13			.11	.53								.12			.75		.53			.18					T.		T.	2.35
Battle Creek	Kalamazoo			T.	T.	T.	.57	.85			T.	.18	.06			T.	.06		.43		1.10			.28			T.	T.		T.		T.	3.53
Bay City	Saginaw			.02		.01	.01	.50								.08		.33		.80		.05		.05								1.85
Benzonia	Betsey		.08	.30	.12	.20	T.	.22	.04			.07	T.	.02			.12		T.		T.			.39			.30	T.		.10		1.28	3.24
Berlin	Clinton			.22	T.		.80	.61	.02			.31	.06			.02	.16	.32	.41		.82			.32				T.		T.		.10	4.17
Big Rapids	Muskegon							.40													.22			.53							.09		1.24
Blissfield	Raisin			T.			.45				1.10						.10	.21	.35		.95	T.		.45						T.		T.	3.61
Bloomingdale	Lake Mich.			.05	T.	T.	.05	.40				T.	T.			T.	T.		.30		.30			T.				T.	T.	T.		.15	1.25
Cadillac	Manistee				.20		.08	.17	.25			.16						.03			.20			.63			.19			.04		.30	2.25
Cassopolis	St. Joseph																																
Charlevoix	Lake Mich.					.30		.30																.30				.10		.10	.30	.20	1.60
Charlotte	Kalamazoo							.80					.20					.40	.20		.30												1.90
Cheboygan	Cheboygan			T.		.30			.60						T.				.10	T.		T.	T.	.15			T.	.12		T.		T.	1.27
Clinton	Raisin			.06			.61	.59				.57	.06					.25	.18		1.20	.12		.30								.07	4.01
Coldwater	St. Joseph			T.		T.	1.15	.20	.05			.20	.04			.04	.03	.27	.38		1.00	.02		.48					T.	.01		.22	4.09
Concord	Kalamazoo																																
Croton	Muskegon			T.	.25		T.	.60	T.			T.					T.	T.	T.		T.			.20				T.		T.		.10	1.15
Detroit	Detroit		T.	.37	T.	.25	.11	.62	.09		.24	.36	.10			.03	.35	.01	.06	T.	.86			.36			T.	T.		.02	T.	.12	3.95
Durand	Saginaw																																
East Tawas	Lake Huron			.20		T.	.50	.10			.08						.35										T.			T.	.07	T.	1.30
Eloise	Rouge			.20	T.	T.	.72	.45	.15			.38	.05			.01	.01	.35	.15		1.09	.08		.33						.01		.10	4.08
Flint	Saginaw			.04				.55	.10			.07	T.				.05	.10	.45					.15								.06	1.57
Frankfort	Betsey		.10	.30	.20	.20		.20													.10			.30		.10				.10		.50	2.10
Ganges	Lake Mich.			T.	T.	T.	.05	.06			T.					.27	.03	.06	.25		.20			.25						T.		T.	1.17
Gaylord	Cheboygan		T.	.07	.08		.19	.04	.14					.13			T.		T.					.27		T.	.12	.02			.02	.24	1.32
Gladwin	Saginaw						.10	.30				T.						1.10			.10			.40									2.00
Grand Haven	Grand			.06	.02	.03	.18	.14	.01	T.	.10		T.	T.		.04	.15		.20	T.	.08	T.	.04	.48			T.	.01		.01	.02	.15	1.72
Grand Rapids	do		T.	.03	.03	.03	.23	.28			.01	.01	.01			.02	.04		.18	.03	.44			.36				T.		T.	.05	.11	1.86
Grape	Raisin			.26		.02	.48	.65	.03		.01	.43	.11			T.	.09	.21	.25		.91	.07		.34						.01		.05	3.92
Grass Lake	Grand			T.		T.	1.05	.40	.15			.20	T.			T.		.17	.45		.95			.30						T.		.05	3.72
Grayling	Au Sable			T.	.05		.10	.10	T.				.05				.25	.36			.10		.45				.06	.03	.04	T.		.09	1.68
Greenville	Grand							.40	.20									.14		.16	.20			.47									
Harbor Beach	Lake Huron			.20	.20			.60	.30									1.00	.60		.50												3.40
Harrison	Saginaw							.15																.60									
Harrisville	Lake Huron					.05	.01	.40	.05			.30					.02	.20			.20			.50			.10	T.		T.			1.83
Hart	Pentwater			.20	.30	.30						.10	T.	T.				.30	T.		.20					.10	.20	T.			.40	2.10
Hayes	Pigeon			.17			T.	.40								T.	T.	.97			.28			.27						T.		T.	2.09
Highland	Huron						.35	.30			.70	.61					.10	.33			.46			.91							.10		3.86
Hillsdale	St. Joseph			T.		T.	.85	.45	T.		.08		.07			.03	.14	.14	.32		.95			.47					.02	.02		.20	3.74
Holland	L. Michigan			.08	T.	.02	.05	.36	.01			.03				.02	.04	.02	.23		.37			.39				.05		T.	T.	.08	1.75
Houghton Lake	Au Sable				.01				.02			.18									.05			.42			.04						0.72
Howell	Saginaw			.02			.50	.15	.02			.47	T.			.01	.10	.75	1.15		.95			.35				T.				.10	4.57
Ivan	Manistee		T.	T.	.15	.04	.16	.04	.16			.16	.05						T.		T.			.40		T.	.18			T.		.15	1.49
Jackson	Grand			T.			1.25	.65	.05			.15	.04			T.	.02	.18	.55		1.10	.02		.30				T.		T.		.08	4.39
Jeddo	St. Clair			.30	T.		.20	.25	.05			.03	.08			T.		.45	.15	.25	.30			.07			T.	T.		T.		.02	2.15
Johannesburg																											.40	.05		T.	T.	.08	
Kalamazoo	Kalamazoo			.20	T.			.60										.35			.75			.15								.25	2.30
Lansing (Agr. Col.)	Grand			.01		.22	.36	.33	.05		.07	.11	.02			.01	.10	.02	.53		.95		.02	.19							.07	.04	3.10
Lansing (capitol)	do				.03		.30	.50	.20			.13	.05				.04	.14	.25	.35	.30	.58		.19	.01							.10	3.17
Lapeer	Saginaw																																
Ludington	Pere Marquette		T.	.11	.01	.09	.06	.20	.02		.14	T.	T.	T.		T.	.04		T.		.03	T.	.04	.62			.24	T.	T.	.02	.03	.16	1.81
Luther	Manistee		T.	.03	.10		.20	.40	.03	T.		.24	T.			T.	T.	.01	.06		.07	T.		.61			.20	T.		T.	.02	.06	2.03
Mackinaw	Lake Huron																																
Mancelona	L. Michigan			.05	.50	.10		.20					.10											.30			.20	.20				.30	
Manistee	Manistee			T.	.10				.10															.30			.05					.20	0.75
Marshall	Kalamazoo																																
Midland	Saginaw			T.	T.		T.	.30									T.	T.	.10		.10			T.							T.	0.50
Morenci	Maumee			.13			.57	.58	.10			.59	.05			.01	.07	.24	.35		1.10	.06		.40					.02	.03		.03	4.33
Mount Clemens	Clinton			.35	T.	T.	.80	.60	T.		T.	.35	.09			T.	T.	.30	T.		.25	.28		1.00						T.		T.	4.02
Mount Pleasant	Saginaw																																
Muskegon	Muskegon			.05		.02	.01	.30					.01			.05	.05	T.	.10		.05			.10				.10				.15	0.99
Old Mission	L. Michigan			.27	.14	.07	.15	.05				.03												.25	.20	.15	.20	.05		.01		.40	1.97
Olivet	Kalamazoo			T.	T.	T.	.27	.40	T.		T.	.23	T.			.06	.02	.21	.11		.84	.15		.28			T.					.09	2.66
Omer	Lake Huron																																
Onaway	Cheboygan			.30		.30		.60																.60								.50	2.30
Owosso	Saginaw			.15	.05		.05	.80			.25					.02		.04	.44		.30											.22	2.32
Petoskey	L. Michigan		T.	T.	.40	.20	.20	.25	T.	T.		T.	T.	T.	T.	T.	T.							.32		T.	.10			.05		.20	1.72
Plymouth	Rouge			.10	.10	T.	.90	.20	.20		T.	.35	T.	T.		.10	.10	.10	.12		1.12	.05		.11				T.		T.		T.	3.55
Pontiac	Clinton			.40			.87	.50				.28	.20			T.		.10	.10		.05			.74				T.		T.		.08	3.32
Port Austin	Lake Huron			.03	.20			.30	.09									.42	.10		.30			.31									1.75
Port Huron	St. Clair		.05	.12	T.	.68		.51	.03		.12	.11	.01			.01	.39	.05	.28		.39			.24			T.	T.		.01	.02	.06	3.08
Reed City	Muskegon																																
Roscommon	Au Sable					.02	.05	.25													.05		.45				.02					.33	1.17
Saginaw, East Side	Saginaw			.15			.10	.30	.30			.02		T.		.01		.20	.70	.10	.30			T.				T.		T.		T.	2.18
Saginaw, West Side	do			.07	T.	.09	.08	.18			T.	.02	T.			.01	.20		.59	.04	.49			.08			T.	T.	T.	T.	T.	T.	1.85
St. James	L. Michigan		.15	.03	.07	.08	.30							.80												T.	.10			.20	.03	.20	1.96
St. Joseph	St. Joseph			.10	T.	T.	.50	.20	.20			T.				.50	.30	.10	.01	.10	.20							.05	.10			.10	2.46
Sandusky	Lake Huron			.10		.30	.40	.10										.42			.70												2.02
Saranac	Grand				.03	T.	.05	.17	.05			.09					T.		.40		.47			.34								.07	1.67
South Haven	L. Michigan	T.	T.	.10	.10			.40				.20	T.			.60		.50	.10	.10	.10			.40		.20	.20			.05		.40	3.45
Thornville	Saginaw			.30	.30	.10	.20	.35	.30							T.	.25	.40	.20		.40											.15	2.85
Traverse City	L. Michigan				.10	T.	.15		.70															.10			.10					.30	1.45
Vassar	Lake Huron			.10			T.	.50	.10			T.				T.		.38	.70		.30			.28								T.	2.36
Wasepi	St. Joseph			T.		.10	1.00	.73			T.	.22	.23			.03	.10				2.50			.40						T.			5.31
West Branch	Lake Huron						.20	.10										.15			.05			.45									0.95
Ypsilanti	Huron			.20		T.	.62	.63				.47	.03			T.	.20	.21	.23		1.12			.55								.05	4.31
Ohio.																																	
Akron‖	Lake Erie			.13	.30	.10	.23	.48	.80	T.	T.	.62	.54				T.	.98	.12			.87		.30	.10			T.	T.	.25	T.	.04	5.86
Antwerp	Maumee	.25		.35		.50		.80	.10		.55	.22						.40	1.55			1.32		.47					.23			6.74
Benton Ridge	do			.50	.10	T.	.80	.57	.35		.60	.68	.25			.11	.22	.62	.42		.76	.10		.63					.50	.02		.12	7.35
Bowling Green	Lake Erie			.15	T.	.10	.57	.40	.13		.20	1.00	.10			.40	.30	.20	1.10		1.04	.05		.48					.35	.05		.05	6.67
Bucyrus	Sandusky		T.	1.55	T.	.30	.18	.80	.05		T.	.50	.10			T.	.20	.20	.05		.35	.15		.20					.60	.50		.10	5.83
Cleveland (1)	Lake Erie		.13	.37	.01	.16	.15	.70	.05		.46	.96	.10			.01	.66	.30	.46		.66			.24		T.	T.	T.	.09	.03		.12	5.66
Cleveland (2)	do		.12	.38		.10	.15	.69	.05		.35	.75	.20			T.	.73	.42	.33		.65			.26			T.		.02	.10			5.30
Conneaut	do			.56			.73	.43	.60			.90	.42				.04	.59	1.01		T.	.61		.36				T.		.03		.05	6.33
Findlay	Maumee		T.	.15	T.	.08	.78	.75	.21			1.10	.28				.25	.51	.38		.88	.40		.65					.60	T.		T.	7.02

TABLE 2.—*Daily precipitation for January, 1913. District No. 4*—Continued.

Stations.	Watershed.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Ohio—Continued.																																	
Fremont	Sandusky			.83	T.	.50	.08	.74	.01			1.03	.33					.62	.75		1.04			.42				.15	T.		.12	6.62
Hedges	Maumee			.43			.90	1.14	T.			.75	.23				.65	1.25			1.00	.10		.52				.22				7.19
Hillhouse	Lake Erie			.38	T.	.07	.55	.45	.50	T.		1.11	.51				T.	.80	.91	T.	.20	.45		.50				T.	T.		.16	6.59
Hiram	do		T.	.69	.03	.08	.09	.56	.22		T.	.71	.36			T.	.34	.47	.10		.43	.10		.24			T.	.07	.15		.05	4.69
Hudson	do			.40	.10		.20	.34	.65			.70					.50	1.02			.25	.50		.44				.20	.20			5.50
Lima	Maumee		T.	.40	.20	.35	.58	1.30	.10	T.	.20	.90	T.			.35	.42	.46	.15		.90	.10		.76				.30	T.			7.67
Medina	Lake Erie			.24	T.		.70	.67	.35		.21	.91	.23			.07	.48	.55	.19		.57	.13		.45				.28	.10		.12	6.25
Montpelier	Maumee			.11			.12	.15	.16		.90	.12	.12			.10	.31	.58	T.		1.30	.12		.54				.13	.06		.11	4.93
Napoleon	do		.28			.48	.26	.60			.46	.40					.30	.78			.93		.46					.11		.07		5.13
New Bremen	do		.03	.40	.20	T.	.70	1.41			.50	.30	T.			.26	.20	.43	.05		.99	.20		.41				.13	T.			6.21
North Royalton	Lake Erie			.60	.10		.75	.43	.57			.93		.21				1.07	.40		.53	.10		.43				.20	.20		.21	6.73
Norwalk	do			.75	.10	.10	.38	.70	.24		.10	.97	.29				.38	.70	.19		.70	.07		.36				.20	.15		.22	6.60
Oberlin	do		T.	.85	.07	.15	.20	.60	.07		.06	1.03	.37			T.	.44	.60	.35		.66	.20		.36				.13	.10		.20	6.44
Ottawa	Maumee			.35	.05	.03	.40	.58	.13		.04	1.03	.07			.02	.28	.44	.40		.79	.02		.55				.13	T.		T.	5.31
Sandusky	Lake Erie		.15	.62	T.	.26	.24	.59	.05		.52	.78	.07			T.	.58	.83	.19		.66			.35			T.	.11	T.		.10	6.10
Tiffin	Sandusky		.15	.76	.10	.98	.24	.66	.29		.18	.82	.41			.05	.26	.63	.24		1.15			.50			T.	.70	.10		.30	8.52
Toledo	Maumee		.20	.26	T.	.14	.59	.90	T.		.53	.63	.04			.06	.49	.49	.33		1.37			.43			T.	T.	.02	.02		.13	6.63
Upper Sandusky	Sandusky		.25	.50	.08	.05	.65	.35	.40		.15	.90	.05			T.	T.	1.40	.30			1.00		.30					.46	T.		.34	7.18
Vickery	Lake Erie		T.	.81		.26	.29	.75	.06		.15	.97	.32				.44	.30	.80		.79	.08		.41					.12	.04		.12	6.71
Wapakoneta	Maumee		.03	.52	.14	.15	.56	1.11	.15		.15	.92	.25			.04	.52	.54	.09		1.00	.25		.47				.40	T.		.24	7.53
Wauseon	do		.04	.24	.01	.06	.58	.74	.10		.09	.63	.16			.04	.26	.08	.82	T.	1.33			.39			T.	.10	.03		.14	5.84
Wickliffe	Lake Erie			.35		.03	.24	.50	.48			1.27	.14				.50	.43	.88		.47	.16		.28			T.	T.	.10	T.	.16	5.99
Pennsylvania.																																	
Erie	Lake Erie		T.	.46	T.	.35	.45	.60	.27	T.	.03	.76	.20			.01	.20	.32	.97		.55	.07		.27			T.	T.		.04		.05	5.60
New York.																																	
Adams Center	L. Ontario			.84	.78	.30	.30	.10	.44			.33	.86	.10		.30	.05	.37	.42	.20	.22	.10	.10	.31	.12			.05	.10	T.		T.	6.39
Angelica	Genesee			.77	.28		.10	.37	.43			.15	.53				.01	.27	.39		.08	.25		.20	.02				T.	.05		.10	4.00
Appleton	L. Ontario		T.	.90	T.		.69	.50	T.			.75	.32			T.		.66	.15		.35	.20		.27				T.	T.		T.	.14	4.93
Auburn	Oswego			2.00	.61		.08					.54	.62				.78	T.	.72		T.			.34				.11				.06	5.86
Avon	Genesee			.60	.06		.14	.37	.30			.08	.41				.02	.14	.39		.05	.20		.05				T.	T.	T.		T.	2.81
Blue Mt. Lake	Raquette																																
Brockport	L. Ontario			.76	.26		.22	.52	.43		.29		.68				.02	.37	.25	.05	.04	.50		.14	.01			.10	.02			.04	4.70
Buffalo	Lake Erie		.01	.61	T.	.19	.72	.21	.09	T.	T.	.98	.36			.12	.30	.47	.21		.63	T.		.43			T.	T.	T.	T.		.23	5.56
Canton	Grass			.94	.24	T.	.26	.57	.46			.22	.52			T.	.05	.20	.62		.28	.22		.06		T.	T.	.01	T.	.16	.02	.10	4.93
Cape Vincent	St. Lawrence			1.20			.39	.68				.97					.09	.47	.50		.62			.42					.01		.20	5.55
Chazy	Champlain			.18			.12	.30		.40			.15							.30				.05				T.				1.50
Chesnut Lawn	Genesee			.70	1.10		.20	.82	T.	.02		.22	.38				.01	.27	.87	T.	.08	.30		.18				T.	T.	T.		.10	5.25
Dannemora	Champlain			.46	.17		.43	.13	.13				.08				.80	T.	.32	T.	T.	.60	T.	.10	T.	T.		.05		*	.21	.20	3.68
Elba	L. Ontario			.60	.60		.42	T.	T.			1.10	.25					.7	.23	.20	.22	.20		.38	.22			T.	T.	T.		.09	5.21
Fayetteville	Oswego			.80	.23	T.	.24	.18	.44			.36	.33				.16	.14	.35	.03	.04	.11		.12				.08		T.		T.	3.61
Gabriels	St. Regis			.60	.35	.09	.50	.77	.03		.06	.72				.08	.30	.52	.13		.45	.05	.02	.23		.02	.32	.03		.03	T.	.15	5.45
Harkness	L. Champl'n			.35	.09		.17	.37	.50				.23						.19	.12		.04										2.06
Hemlock Lake	Genesee			*	1.05	*	.08	*	.74		*	*	.55			T.		.17	.69	T.	.24			T.							T.	3.52
Hunt	do			.86	1.20		.20	.97											1.55		.37			.35							.16	5.66
Ithaca	Oswego			1.44	T.	T.	.25	.25	.13			.35	.31			T.		.04	.15		.09	.10		.03				T.	T.	T.		.01	3.15
Keene Valley	Ausable			.48	.30		.63	.56	.32				.33					.26	.63	.15	.38	.14	T.	.18				.11		.30		.48	5.25
King Ferry	Oswego			1.50	.04			.21	.16			.37	.36					.14	.09			.22		.03				.02					3.14
Lake George	L. Champl'n			.92	.21		.17	.22	.08			T.	.21					.26	.70		.11	.33	T.	.48				T.	T.	.31	.06		4.06
Lake Placid Club	Ausable, W.B	.05		1.21	.45	.52	.86	.51	.09			.95	.41				.28	.15	.65	.21	.15	.05	.22	.18	.05			.11	.05	.12	.09	T.	7.36
Lauterbrunnen	Genesee			.75	.91		.22	.60	.45	T.		.13	.38				.01	.27	.86	.03	.08	.35		.16				T.	T.	T.		.10	5.30
Lockport	L. Ontario				.40		*	*	1.44	T.			.82					.53	.15		*	.55		.19				T.		T.		.20	4.28
Lowville	Black			.71	.30	.06	.06	.32	.50				.66				.01	.30	.59	.01	.16	.68	.01	.46	.01			.01		.09		.15	5.09
Moira	St. Lawrence			1.75	.40	.10	.40	.20			.10			.10					.23	.40	.15	.47		.25				.10	T.		T.	.03	4.68
Nehasane	Black	.01		.92	.60	.35	.80	.32	.70	T.		.13	1.02	.03			.06	.50	.57	.18	.13	.60	.05	.32	.08	T.		.32	.04	.05	.05	.11	7.94
North Lake	do			1.00	.65	T.	.71	.62	.73			.11	.72				T.	.80	.52	T.	.19	1.16		.52	.17					.15	.13	.12	8.30
Ogdensburg	St. Lawrence			.92	.35		T.	.27	.43			.06	.62				T.	.20	.40	.24	T.	.40	T.	T.			T.	T.	T.	T.	.10	T.	3.99
Old Forge	Black			1.10	.48	.19	.55	.54	.80			.15	.85				.05	.50	.55	.14	.02	.90	.06	.35	.07			.02	.07	.04	.15	.25	7.83
Oswego	L. Ontario			1.43	.03	.08	.41	.29	.09			.49	.23			T.	.07	.38	.28	T.	.19	.05		.24				T.	.18	T.	T.	.01	4.45
Otto	Lake Erie			.68	.20		.40	.86	.15	T.		.24	.08	T.			.22	.35	.06					.23	.06			T.		.05	.04	T.	3.62
Palermo	L. Ontario			1.01	.05	.90	.04	.03	T.			.71					.05	.08	.20	.10	.10	.05		.09			.60	.04	T.			.05	4.10
Perry City	Oswego			1.25	.06		.07	.22	.18			.23	.39				.02	.24	.04		.05	.27		.08									3.10
Philadelphia	St. Lawrence			.53	.17		.31	.29	.47			.28	.38				.06	.41	.27	.11	.0	.50		.14	.04					.03	T.		.03	4.08
Potsdam	Raquette			.16	1.16			.32	.86			.09	.60	.09			.13	.72				.43			.09						.08	.05	4.78
Prospect Home	Genesee																																
Ranger School	Oswegatchie			1.00	.46	T.	.58	.24	.55	T.		.07	.77	.01			.07	.41	.53	.21	.09	.73	.01	.23	.09		.01	.33	T.	.01	T.	.13	6.53
Raquette Lake	Raquette			.54	.59	.17	.23	.32	.77			.09	.73	.08				.51	.56	.34		.69	.05	.12	.27		.01	.25		.03			.12	6.52
Rochester	Genesee			1.75	.05	.10	.30	.46	.08			.71	.23			T.	.06	.29	.28		.37	.02		.07			T.	.09	T.	T.		T.	4.86
Romulus	Oswego			1.73	.20		T.	.06	T.			T.	.20			T.			.31		T.			.16				T.					2.66
Scottsville	do																																
Shortsville	do																																
Skaneateles	do																																
Syracuse	do			1.24	.04	.05	.22	.40	.19			.39	.28			T.	.02	.20	.44	T.	.02	.04		.15				.11	T.	T.		.01	3.80
Tupper Lake	Raquette			.15	.17		.15	.25	.10			T.	.32			.16	.27	.11	.22		.55	.09	.10	.10		T.		.10		.14	.06	.34	3.38
Volusia	Lake Erie			.72	.30	T.	.40	.83	.80			.13	.50				T.	.15	.70	T.	.55			.34				T.		.12		.12	5.54
Wanakena	Oswegatchie			.96	.48	T.	.72	.30	.58	T.		.08	.81	.01			.07	.40	.53	.22	.09	.76	.01	.24	.07		.01	.33	T.	.01	T.	.13	6.81
Watertown	Black			.83	.26	.24	.24	.15	.49			.15	.92				.13	.33	.17	.12	.23	.35		.14	.03			T.	.03			.05	4.86
Wedgewood	Oswego																																
Westfield	Lake Erie			.64	.06	.17	.98	.87	.49			.61	.52					.91	.49		.39	.13		.83								.31	7.40
York	Genesee			.92	.45		.30	.40	.35			.20	.36				.01	.24	.52	.02	.07	.39		.12				.03	T.	T.		.02	4.40
Youngstown	L. Ontario																																
Vermont.																																	
Burlington	L. Champlain			.26	.02		.16	.43	.41			.02	.29				T.	.09	.52	.12	T.		T.	.01		T.		T.	T.	.02		.03	2.38
Cornwall	do			.25	.04		.10						.06	.25				.15	.70		T.	.40		.20		T.			T.		T.		2.15
Enosburg Falls	do			.18	.31		.30	.58	.65				.97				.05	.20	.12	.16	.04	.20	T.	.04		T.			T.	.08		3.88
Hyde Park	do			.32	.26		.21	.44	.61				.65					.23	.11	.38		.39		.02	.02			.09		.09		3.82
Northfield	do	T.		.47	.02		.14	.40	.22			.05	.35				T.	.16	.37	.02	.15	.21		.05		T.		T.	T.	.06	.04	.14	2.84
Wells	do			.21	.06		.05	.31	.62			T.	.42					.32	.17	.16		.56		.80						.07		T.	3.75

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 4, Lake Region.*

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.								Lower Michigan.							
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	38	18	34	5	41	20	43	28	43	32	43	27	37	19	39	0	37	11	41	24	33	23	35	21	41	25	36	16
2....	25	9	35	14	38	23	39	23	43	24	46	28	35	30	35	14	34	18	36	27	34	32	38	32	42	33	37	24
3....	9	− 2	28	15	26	14	26	13	32	21	28	24	30	15	27	12	25	14	27	15	33	11	35	22	34	25	31	23
4....	13	− 9	18	7	14	5	21	10	27	16	25	14	18	6	12	−19	19	12	18	11	16	7	24	15	28	18	24	13
5....	− 2	−16	11	− 4	9	5	28	13	31	19	43	14	12	2	1	−20	14	1	14	0	17	4	28	10	27	16	20	9
6....	− 1	−15	14	2	20	9	27	15	32	23	40	32	21	11	14	0	13	6	18	10	20	3	30	21	32	26	23	18
7....	8	−12	13	1	15	12	26	18	30	28	32	29	14	10	12	5	13	5	16	11	7	− 5	21	16	30	20	21	11
8....	9	− 4	17	5	19	3	21	10	28	17	32	17	20	8	19	−13	18	8	22	9	15	− 3	18	9	26	11	18	5
9....	22	8	24	− 1	22	6	23	8	29	15	31	15	22	8	27	−13	31	4	24	8	30	8	26	9	25	6	21	0
10....	16	2	24	7	23	14	33	19	36	23	38	24	22	10	22	12	24	21	27	13	26	16	30	22	33	16	28	15
11....	9	−16	20	1	24	2	34	5	38	11	39	27	26	6	20	0	23	2	23	6	27	16	32	19	35	30	30	24
12....	− 9	−28	5	−11	2	− 7	5	− 5	13	0	27	13	6	− 5	5	−22	3	− 7	6	− 5	16	− 5	19	4	31	14	24	20
13....	7	−10	7	−13	12	− 3	21	2	30	13	33	12	9	− 4	10	−20	12	− 7	13	− 4	12	− 3	20	4	29	6	20	1
14....	17	− 5	21	− 2	26	− 1	33	7	34	17	32	26	24	0	23	−16	24	− 3	20	6	32	4	28	16	30	24	27	13
15....	25	16	34	12	37	26	40	33	44	32	43	31	38	23	31	12	31	12	36	19	35	30	36	27	39	26	37	27
16....	35	19	37	28	45	34	49	35	54	42	53	43	37	30	39	26	37	26	37	29	35	31	39	34	43	36	38	32
17....	35	− 5	41	13	47	16	51	29	55	36	56	43	40	13	42	2	41	13	43	14	44	22	50	28	51	42	45	32
18....	8	− 9	15	3	20	12	29	18	37	26	43	31	19	10	14	2	16	9	18	14	22	9	28	20	42	25	33	20
19....	24	− 8	32	9	37	17	40	23	47	29	53	28	35	18	34	10	36	14	36	15	33	9	35	21	42	22	33	19
20....	− 5	−18	37	0	32	1	32	5	43	11	54	23	32	− 3	24	− 9	16	2	23	− 4	33	12	36	12	47	25	37	18
21....	23	−18	20	−12	27	− 3	27	4	28	9	29	15	21	− 6	21	−14	21	− 8	21	− 8	23	0	22	6	25	10	22	7
22....	28	− 6	23	− 2	36	16	37	22	37	22	36	21	33	9	29	−14	30	1	33	7	30	17	32	19	35	18	32	15
23....	27	− 4	32	13	37	16	39	21	40	32	44	34	36	9	31	3	31	10	34	8	33	19	36	21	36	30	32	26
24....	15	− 4	29	− 1	23	1	35	10	39	24	40	29	29	4	23	− 3	19	2	28	3	28	11	34	8	36	21	31	0
25....	27	5	26	8	37	15	39	28	43	31	42	29	32	14	30	− 3	30	7	31	13	18	10	32	16	38	25	33	10
26....	27	3	26	12	35	15	44	21	48	29	54	32	28	16	28	12	31	13	30	13	29	14	37	18	46	32	36	23
27....	12	− 1	13	2	15	6	21	14	29	20	32	23	16	3	13	5	14	5	14	7	15	4	20	4	38	20	24	11
28....	12	− 4	15	− 3	20	1	24	10	28	21	23	18	20	− 2	30	− 3	15	5	19	6	16	− 4	20	2	23	14	25	1
29....	24	11	24	10	31	13	35	19	39	21	33	14	25	14	23	11	26	11	26	15	24	3	29	3	30	13	23	[g]
30....	22[a]	4	27	20	30	25	42	28	50	32	49	33	28	21	28	13	27	22	28	24	28	22	34	27	46	26	35	23
31....	4	−16	28	− 1	26	2	28	0	32	2	45	3	26	5	23	0	22	0	24	7	26	− 9	36	7	42	14	36	14
Mns..	16.3	−3.7	23.5	4.4	26.6	10.2	32.0	15.7	36.7	21.9	39.3	24.2	25.5	9.5	23.5	−1.0	23.6	7.4	25.4	10.1	25.5	9.9	30.3	15.9	35.5	21.6	29.4	15.3

Date.	Lower Michigan.						Ohio.								Erie, Pa.		New York.						Vermont.			
	Detroit.		Muskegon.		Saginaw, West Side.		Cleveland.		Lima.		Sandusky.		Toledo.				Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	40	27	42	27	42	26	42	29	38	32	44	28	39	26	41	31	39	32	39	29	40	32	41	30	40	28	41	23
2....	45	36	33	27	43	31	48	36	47	35	51	34	49	34	48	37	49	35	44	28	51	33	47	32	42	24	34	15
3....	36	26	32	26	32	25	38	26	41	23	34	25	35	26	44	30	44	30	43	29	43	32	45	29	52	32	49	28
4....	26	19	27	18	25	18	26	20	26	15	25	20	26	21	30	23	30	25	29	19	32	24	30	26	36	24	36	25
5....	32	17	25	15	28	15	46	23	32	12	45	20	35	17	43	22	37	21	26	9	34	19	33	22	30	16	28	16
6....	39	31	28	22	30	20	53	34	48	32	49	30	42	30	55	31	47	30	42	16	46	31	49	32	42	19	40	17
7....	31	24	27	17	27	21	43	31	34	29	33	30	32	28	33	30	32	25	22	11	31	26	32	26	24	8	36	16
8....	25	13	24	15	24	8	36	20	34	16	32	14	28	14	33	20	29	16	11	−1	30	13	34	9	34	5	28	3
9....	25	13	31	15	24	7	30	14	30	10	29	11	25	11	30	20	30	14	21	−11	24	13	27	4	17	− 4	13	−1
10....	36	23	35	28	33	17	39	25	36	25	38	24	36	21	40	28	38	29	32	21	38	19	42	25	31	17	33	6
11....	36	30	36	28	35	26	49	32	44	35	43	33	41	33	49	35	43	36	40	31	46	37	51	36	41	28	43	12
12....	30	13	28	11	26	7	32	22	39	18	33	18	33	14	35	21	36	16	36	− 7	38	16	42	12	41	3	50	5
13....	30	12	29	11	26	6	35	17	35	15	33	17	30	14	32	21	31	13	19	− 8	27	14	25	11	18	− 6	14	− 4
14....	32	21	33	21	30	20	38	22	34	21	37	21	34	20	39	24	36	27	34	2	36	22	36	19	28	11	27	5
15....	38	30	41	33	40	27	44	34	40	30	43	33	41	29	45	36	44	35	42	34	44	35	45	34	38	28	42	18
16....	46	37	44	34	45	36	51	44	49	37	52	43	49	40	51	41	48	38	41	34	44	40	48	40	39	36	44	33
17....	54	44	46	35	53	34	57	51	55	48	56	50	57	45	58	51	53	41	51	40	56	44	56	44	48	38	54	34
18....	44	26	35	22	34	22	53	31	52	33	53	32	45	30	54	29	49	28	46	25	51	30	54	30	47	32	54	31
19....	45	26	41	24	41	22	46	30	51	27	53	30	50	28	49	29	43	27	25	14	35	29	33	28	32	12	31	14
20....	48	21	39	21	40	13	59	27	57	30	58	26	53	24	59	29	56	30	51	18	55	33	55	31	44	12	41	14
21....	26	13	29	13	24	7	27	21	33	16	28	20	26	17	29	22	30	20	47	17	33	23	48	20	47	17	49	14
22....	35	21	36	20	35	20	37	24	37	20	38	23	35	22	37	25	36	28	33	15	36	25	35	22	33	18	31	15
23....	41	33	36	28	36	29	54	35	50	32	51	34	47	33	52	35	46	31	44	17	47	30	49	29	41	22	49	19
24....	36	29	33	19	34	21	39	33	41	30	39	31	40	31	39	33	37	33	37	29	39	31	40	33	41	29	47	23
25....	39	28	38	24	36	23	43	31	44	27	43	29	42	29	43	31	38	30	33	20	34	31	34	31	34	23	33	20
26....	50	30	40	30	45	23	55	37	55	35	55	36	55	33	54	38	48	38	47	21	52	34	51	34	44	24	51	22
27....	30	22	30	19	23	13	39	24	45	26	37	24	33	23	40	24	39	23	41	13	43	22	50	20	44	15	50	15
28....	22	14	26	13	23	11	26	22	28	21	27	22	24	19	26	23	28	20	22	4	26	21	26	18	25	5	21	8
29....	31	19	36	15	32	16	35	24	30	17	36	24	31	22	36	23	34	20	33	1	35	15	34	11	25	0	22	1
30....	46	31	43	30	43	30	51	33	48	29	51	32	48	31	52	34	49	34	14	32	48	35	47	34	38	25	37	22
31....	45	12	41	14	41	13	50	18	48	21	50	16	48	13	52	22	50	24	54	30	53	26	55	30	49	37	51	25
Mns..	36.7	23.9	34.3	21.8	33.9	19.6	42.6	28.1	41.3	25.4	41.8	26.8	39.0	25.1	42.8	29.0	40.3	27.4	36.4	17.2	40.2	26.9	41.7	25.9	36.9	18.6	38.1	15.9

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§ § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 5, UPPER MISSISSIPPI VALLEY.

GEO. M. CHAPPEL, District Editor.

GENERAL SUMMARY.

Considered with reference to conditions in different parts of the district, January, 1913, in the upper Mississippi Valley was a month of decided climatological contrasts. In extreme southern Illinois the weather was unusually wet and much milder than in the ordinary January; over the central part of the district mild and pleasant weather for the time of year predominated, while in the north cold but fair and comparatively pleasant conditions were the characteristics. As a whole, however, the month may be classed as mild and open and one of the pleasantest Januarys in recent years.

The principal adverse events were the flood in the Ohio River and an ice storm in Illinois. The latter occurred on the 5th, 6th, and 7th and was prevalent in the central and southern parts of that State. The damage caused was principally to electric services and trees.

In some sections the absence of seasonably cold weather was indicated in the ice situation, the harvest not having begun at the close of the month. After the 15th the ground was generally bare of snow in southern sections, and by the end of the month roads were in excellent shape.

The following table presents in condensed form the leading features of climatological interest for the various parts of the district:

Parts of States within District 5.	Temperature.				Precipitation.					
	Mean.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Average snowfall.	Average number of days with precipitation.
North Dakota	0.2	−3.2	50	−43	0.43	−0.06	1.00	0.09	4.8	5
Minnesota	7.0	−0.1	54	−47	0.33	−0.44	0.96	T.	4.2	4
South Dakota	9.2	−2.3	55	−23	0.36	+0.01	0.61	0.10	3.5	4
Wisconsin	15.4	+1.5	52	−33	0.90	−0.22	2.35	0.19	9.7	6
Iowa	21.0	+2.2	60	−21	0.87	−0.30	2.05	0.06	8.0	5
Missouri	34.3	+1.9	63	− 9	2.08	−0.04	3.70	0.67	3.1	8
Indiana	29.0	+2.9	58	− 3	3.46	+0.70	4.57	2.96	6.0	15
Illinois	29.4	+4.2	68	−10	3.45	+1.31	11.65	0.38	3.6	10

TEMPERATURE.

A marked difference in temperature existed between the warmest and coldest points in the district—Cairo, Ill., and Pembina, N. Dak. At the former station the average temperature was 40.2°, or 5° above the normal, while at Pembina the average was −9.5°, or 7° below the normal. The weather was colder than usual north of the latitude of St. Paul, Minn., and warmer than usual thence southward. For the district as a whole the mean temperature was 17.2°, or 1.6° higher than the normal.

The first half of the month was considerably colder than the latter half. Low temperatures were practically continuous from the 5th to the 14th, inclusive, the 12th being the coldest day at a large majority of the stations in all parts of the district. The lowest temperature reported was 47° below zero at Bagley, Minn., on the 12th. Zero temperature occurred at least once during the month throughout the district save over the southeastern end, or south of a line drawn from below Hannibal, Mo., through the Indiana area. A severe cold wave was sweeping over the district on the 31st, but did not reach its greatest severity till the next day. Many stations reported the highest temperature of the month on the 1st, but at the majority of them this occurred on or about the 17th, 25th, or 29th. The highest temperature reported was 68° on the 17th at Cobden, Ill.

PRECIPITATION.

The average precipitation for the whole district was slightly greater than usual, but the excess was due to the exceptionally heavy amounts in extreme southern Illinois. There upwards of 10 inches occurred, Cairo reporting 11.65 inches. At that station the month was the wettest January since 1876. From Cairo northward the amounts diminished sharply over Illinois, less than an inch being reported from the northern part of that State. Except in southern Illinois and the Missouri and Indiana areas the monthly precipitation did not exceed 2 inches save in a few instances. In the North and South Dakota and Minnesota areas no station reported more than an inch. The least amount was a trace at three points in Minnesota. In respect to time the precipitation was well distributed. Rain or snow was of almost daily occurrence somewhere in Illinois.

Snow.—Snow fell throughout the district, but over areas in Illinois and Minnesota the amounts did not exceed a trace. The heaviest falls occurred in Wisconsin, where the average was about 10 inches. Port Edwards, in that State, reported 19 inches, the most for any station in the district.

RIVERS.

The principal event of the month was the flood in the Ohio River, a full account of which will appear in a subsequent number of the Review. Steamboats were running on the upper Illinois River on the 30th, and navigation from St. Louis to points on the lower Mississippi had been resumed, the earliest in years. At Davenport, Iowa, the Mississippi became closed by ice during the 14th, but opened the following day; it became closed again during the night of January 31–February 1. In the streams of the north the ice continued to increase as the month progressed, and at Moorhead, Minn., a thickness of more than 2 feet was reported.

MISCELLANEOUS.

More than the normal amount of sunshine was received, the excess being greatest over the Iowa area where at Des Moines the percentage of the possible amount was 73. The average number of clear days was 12; partly cloudy, 8; cloudy, 11. Northwesterly winds prevailed, except in the south, where they were southerly or southwesterly. The highest velocity reported was 48 miles from the west, on the 17th, at St. Paul, Minn. A slight earthquake shock was noted at Cairo, Ill., on the 29th, between 4 and 5 a. m.

TABLE 1.—*Climatological data for January, 1913. District No. 5, Upper Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
North Dakota.																				
Amenia	Cass	954	17	−0.2	− 5.5	35	1†	− 43	12	48	0.70	+ 0.25	0.20	7.0	7	23	1	7	nw.	C. E. Wood.
Bottineau	Bottineau	1,638	21	−6.0	− 5.9	32	29	− 41	12	47	0.30	− 0.14	0.05	.....	15	10	8	13	nw.	H. F. Steinmeir.
Bowbells	Burke	1,958	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. H. Phelps.
Cando	Towner	1,488	12	−4.0	− 4.6	38a	29	− 39a	19	68a	0.09	− 0.31	0.05	.....	3	.....	.....	.....	nw.	E. T. Judd.
Crosby	Divide	.....	6	10.3	.....	49	29	− 36	12	42	0.10	.....	0.10	1.0	1	12	8	11	.....	H. C. Kaschau.
Devils Lake	Ramsey	1,482	8	−1.4	− 1.7	36	28	− 32	12	37	0.38	− 0.22	0.16	5.7	9	12	8	11	nw.	U. S. Weather Bureau.
Donnybrook	Ward	1,760	14	0.1	− 3.5	40a	28	− 35c	31	41c	0.90	+ 0.55	0.50	9.0	6	.....	.....	.....	nw.	C. J. DeVore.
Dunseith	Rolette	.....	17	−6.8	−10.1	28	1	− 40i	12	36i	0.09	− 0.37	0.05	0.9	2	.....	.....	.....	.....	C. E. Goodsell.
Eckman	Bottineau	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. Yenny.
Edmore	Ramsey	1,524	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. M. Van Osdell.
Fessenden	Wells	1,610	1	2.1	.....	37	28	− 37	12	46	0.36	.....	0.17	3.3	5	14	9	8	nw.	G. T. Seymour.
Forman	Sargent	1,249	21	8.6	+ 1.7	39	16†	− 30	12	38	0.53	+ 0.02	0.50	.....	3	12	3	16	nw.	A. Maltby.
Grafton	Walsh	827	21	−0.6	− 2.0	35	2†	− 35	13	46	0.35	− 0.23	0.11	5.5	6	16	3	12	nw.	A. R. T. Wylie.
Granville	McHenry	1,504	6	3.6p	.....	42p	28	− 26p	31	40p	0.50	.....	0.20	5.0	3	.....	.....	.....	.....	W. A. Christianson.
Hannah	Cavalier	1,568	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Moffatt.
Hansboro	Towner	.....	5	−3.4	.....	35	29	− 35	6	44	0.36	.....	0.20	4.2	4	19	3	9	nw.	Geo. Dale.
Hillsboro	Traill	901	7	0.6	.....	36	1	− 39	12	43	0.80	.....	0.20	8.0	9	15	11	5	nw.	F. E. Mayall.
Lakota	Nelson	1,579	12	−1.6	− 0.1	34	29	− 39	12	37	0.34	− 0.48	0.16	4.8	7	11	16	4	nw.	C. R. Pettes.
Langdon	Cavalier	1,615	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Woolner.
Larimore	Grand Forks	1,134	18	−2.1	− 5.4	35	28	− 33	12	51	0.69	+ 0.19	0.30	.....	12	12	9	10	n.	J. M. Freeman.
Lisbon	Ransom	1,091	9	6.4	+ 1.1	50	1	− 33	12	53	0.65	+ 0.08	0.60	6.5	2	15	6	10	nw.	W. S. Adams.
McKinney	Renville	1,640	19	−0.2	− 3.5	40	28	− 35	6†	70	0.45	+ 0.09	0.30	4.5	3	1	21	9	nw.	N. P. Swenson.
McLeod	Ransom	.....	1	3.8	.....	40	29	− 32	12	38	0.60	.....	0.30	.....	2	10	18	3	nw.	Martin Reinholt.
Manfred	Wells	1,605	10	3.2	− 0.7	38	29	− 40	12	40	0.60	− 0.08	0.25	6.0	5	9	12	10	nw.	P. B. Anderson.
Mayville	Traill	975	17	1.0	− 5.6	36	1†	− 35	12	41	0.24	− 0.13	0.14	.....	3	18	3	10	nw.	W. C. Gould.
Milnor	Sargent	1,097	1	.....	.....	.....	.....	.....	.....	.....	0.39	.....	0.21	4.4	2	9	15	7	nw.	HJ. Edman.
Minot	Ward	1,557	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. J. Ellison.
Minto	Walsh	820	20	−0.6d	− 2.4	36a	29	− 33e	10	33e	0.13	− 0.35	0.08	.....	3	17	8	6	.....	S. S. Marsh.
Oriska	Barnes	1,270	8	−1.4	.....	36	25†	− 36	12	44	0.33	.....	0.13	3.0	4	14	11	6	nw.	J. J. Taylor.
Park River	Walsh	998	9	−0.8	.....	37	29	− 28	6†	38	0.31	.....	0.08	.....	7	11	9	11	nw.	P. J. Prochaska.
Pembina	Pembina	789	39	−9.5	− 6.8	36	1	− 38	13	45	0.40	− 0.19	0.15	4.0	3	13	7	11	ne.	C. W. Shumaker.
Power	Richland	1,020	21	1.0	− 3.9	36	1	− 35	12	49	1.00	+ 0.45	0.40	10.0	7	17	6	8	nw.	J. A. Power.
Towner	McHenry	.....	11	0.6	− 3.6	37	28†	− 34	12	26	0.15	− 0.27	0.05	1.5	4	10	8	13	nw.	B. Bagley.
University	Grand Forks	830	21	−1.6	− 5.6	34	29	− 37	12	42	0.27	− 0.25	0.15	2.7	5	16	6	9	nw.	U. S. Weather Bureau.
Wahpeton	Richland	962	19	12.6	+ 4.6	50	2	− 30	12	60	0.28	− 0.15	0.18	2.8	2	16	7	8	nw.	Fred E. Smith.
Walhalla	Pembina	966	6	−1.4	.....	37	28	− 30	6	42	0.65	.....	0.30	6.5	4	20	9	2	n.	Ivanhoe Lee.
Westhope	Bottineau	.....	7	−3.8	.....	38	28	− 39	12	42	0.27	.....	0.20	2.7	4	17	10	4	nw.	W. A. Meddaugh.
Willow City	do	1,471	21	−3.0	− 3.9	37	28	− 43	12	53	0.60	+ 0.25	0.30	6.0	4	2	22	7	w.	M. A. Ostby.
Minnesota.																				
Albert Lea	Freeborn	1,229	22	15.1	+ 3.1	46	25	− 15a	12	37a	0.25	− 0.65	0.15	1.0	2	9	16	6	nw.	Edward Carey.
Alexandria	Douglas	1,391	19	5.0	− 1.9	40	1	− 29	12	43	0.68	+ 0.02	0.25	10.0	11	14	7	10	nw.	P. O. Unumb.
Angus	Polk	870	11	−2.8	− 4.7	31	1†	− 38	12	48	0.24	+ 0.02	0.05	2.4	6	12	7	12	n.	John Nadvornik.
Bagley	Clearwater	.....	7	−3.0	.....	35	1	− 47	12	49	0.47	.....	0.37	4.9	2	14	13	4	nw.	Jens Nelson.
Baudette	Beltrami	1,084	3	−0.4	.....	39	17	− 35	7†	48	0.57	.....	0.15	5.7	6	17	7	7	nw.	J. A. Gjelhaug.
Beardsley	Bigstone	1,090	17	9.9	− 0.8	44	25	− 24	12	45	0.48	− 0.25	0.30	5.0	2	11	15	5	nw.	G. L. Fitzgerald.
Beaulieu	Mahnomen	1,200	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Rev. R. Homer.
Bemidji	Beltrami	1,400	9	.....	.....	.....	.....	.....	.....	.....	0.14	.....	0.07	.....	4	.....	.....	.....	.....	C. W. Warfield.
Bird Island	Renville	1,039	23	12.9	+ 3.6	47	25	− 18	12	49	0.08	− 0.52	0.04	0.8	3	5	10	16	nw.	Dr. F. L. Puffer.
Brainerd	Crow Wing	1,215	7	7.2	.....	42	30	− 31	12	52	0.41	.....	0.23	.....	4	24	4	3	nw.	Theo. Miller.
Caledonia	Houston	1,179	20	16.9	+ 2.4	47	16	− 12	12	41	0.94	− 0.05	0.22	12.5	11	6	5	20	nw.	W. D. Belden.
Campbell	Wilkin	984	7	5.6	.....	40	16	− 27	12	55	0.83	.....	0.45	11.0	4	14	1	16	nw.	J. T. Neisess.
Cass Lake	Cass	1,300	6	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.13	5.0	2	.....	.....	.....	.....	C. W. Burns.
Collegeville	Stearns	1,282	20	11.2	− 1.4	42	1	− 24	12	41	0.51	− 0.13	0.18	14.3	5	15	7	9	nw.	F. Tembreull.
Crookston	Polk	863	24	−1.2	− 3.7	32	28	− 38	12	43	0.35	− 0.25	0.15	3.5	4	15	7	9	s.	A. G. Andersen.
Detroit	Becker	1,364	17	−4.2	− 8.7	35	28	− 44	12†	62	0.39	− 0.20	0.20	5.0	5	23	2	6	nw.	G. W. Peoples.
Ely	St. Louis	.....	1	5.2	.....	36	1	− 35	12	44	0.21	.....	0.08	5.8	7	12	10	9	nw.	Iver Wisted.
Fairmont (near)	Martin	1,240	26	16.8	+ 4.7	49	26	− 14	12†	40	T.	− 0.92	T.	T.	0	12	7	12	nw.	W. F. Wherland.
Faribault	Rice	1,003	15	.....	.....	.....	.....	.....	.....	.....	0.15	− 0.40	0.10	2.0	2	.....	.....	.....	.....	Dr. A. B. Moulton.
Farmington	Dakota	902	25	12.8	+ 0.8	50	17	− 24	12	44	0.20	− 0.71	0.18	1.5	2	11	6	14	nw.	E. D. Akin.
Fergus Falls	Ottertail	1,210	21	5.7	− 2.3	36	16	− 28	12	38	0.96	+ 0.32	0.22	9.6	11	13	16	2	nw.	C. E. Kissinger.
Fort Ripley	Crow Wing	1,136	5	4.6	.....	44	17	− 30	8	52	0.23	− 0.30	0.07	4.5	5	22	0	9	n.	J. J. Tucker.
Fosston	Polk	1,289	3	−2.0	.....	39	16	− 40	12	47	0.31	.....	0.25	3.1	2	19	6	6	nw.	O. N. Hem.
Glencoe	McLeod	1,000	16	13.4	+ 0.6	42	26	− 18	12	43	T.	− 0.68	T.	T.	0	23	5	3	nw.	L. V. Koss.
Grand Meadow	Mower	1,338	25	15.4	+ 3.8	44	29	− 16	12	36	0.21	− 0.74	0.07	1.4	5	11	12	8	nw.	C. F. Greening.
Gull Lake Dam	Cass	1,215	2	5.9	.....	37	1†	− 32	12	44	0.32	.....	0.11	5.2	5	13	12	6	nw.	U. S. Engineer Corps.
Hallock	Kittson	815	14	−3.0	− 2.6	33	1	− 38	12	43	0.35	− 0.19	0.10	3.5	5	23	0	8	n.	D. A. Robertson.
Halstad	Norman	870	7	−4.8	.....	33	1	− 42	12	48	0.25	.....	0.19	1.7	2	18	2	11	nw.	A. G. Holstrom.
Hinckley	Pine	1,050	8	8.8	.....	39	1	− 26	12	48	0.37	.....	0.22	5.0	2	15	9	7	n.	W. R. Newman.
International Falls	Koochiching	1,112	10	1.2	− 0.8	36	1	− 34	7	52	0.44	− 0.53	0.10	4.4	6	15	7	9	n.	C. Ardies.
Itasca State Park	Clearwater	1,500	2	2.7	.....	46	1	− 44	12	50	0.10	.....	0.10	1.0	1	20	5	6	nw.	J. A. Stillwell.
Lake Crystal	Blue Earth	.....	5	15.0	.....	46	24	− 16	31	35	0.15	.....	0.10	1.5	2	10	18	3	nw.	E. D. Baker.
Leech Lake Dam	Cass	1,301	25	1.5	− 2.4	36	1	− 35	12	48	0.38	− 0.35	0.28	4.6	6	11	14	6	nw.	U. S. Engineer Corps.
Littlefork	Koochiching	.....	3	−1.0	.....	35	1	− 42	7†	52	0.51	.....	0.34	3.0	2	17	8	6	.....	O. C. Olson.
Long Prairie	Todd	1,299	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. L. Sheets.
Lynd	Lyon	1,175	20	14.6	+ 1.4	52	25	− 19	12	51	T.	− 0.61	T.	T.	0	25	4	2	nw.	J. W. Rouse.
Mankato	Blue Earth	758	15	.....	.....	.....	.....	.....	.....	.....	0.03	− 0.93	0.02	0.4	2	15	4	12	sw.	C. G. Staley.
Mapleplain	Hennepin	1,023	17	11.2	+ 0.4	41	29	− 22	12	45	0.40	− 0.71	0.12	4.7	9	14	9	8	nw.	G. W. Richards.
Milaca	Millelacs	1,072	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Foss.
Milan	Chippewa	955	19	10.4	+ 0.8	46	25	− 23	12	43	0.35	− 0.71	0.20	3.5	3	9	12	10	nw.	O. K. Opjorden.
Minneapolis	Hennepin	918	22	13.0	− 0.3	43	26	− 19	12	40	0.42	− 0.27	0.21	4.5	9	8	18	5	nw.	U. S. Weather Bureau.
Montevideo	Chippewa	900	23	14.2	+ 3.7	51	25	− 20	12	47	0.09	− 0.56	0.06	2.0	3	16	6	9	nw.	L. G. Moyer.
Moorhead	Clay	935	32	1.0	− 1.7	36	16	− 37	12	41	0.45	− 0.26	0.08	4.5	11	15	8	8	nw.	U. S. Weather Bureau.
Mora	Kanabec	.....	8	9.1	.....	41	1	− 29	12	48	0.52	.....	0.20	5.2	7	13	13	5	s.	Hans Peterson.
Morris	Stevens	1,170	28	7.5	+ 0.1	38	1†	− 24	12	47	0.58	+ 0.09	0.20	6.5	5	19	9	3	nw.	D. T. Wheaton.
New London	Kandiyohi	1,215	19	10.8	+ 2.1	38	16	− 22	13	27	0.37	+ 0.22	0.16	5.0	4	11	18	2	nw.	Harold Swensen.
New Richland	Waseca	1,180	19	14.6	+ 1.1	48	25	− 15	12	38	0.12	− 0.79	0.06	1.6	4	14	12	5	nw.	N. O. Tyrholm.
New Ulm	Brown	791	33	12.4	0.0	49	25	− 16	12	49	0.27	− 0.77	0.10	2.7	5	3	6	22	nw.	A. L. Henle.
Osakis	Douglas	1,343	5	7.0	.....	37	1	− 27	12	41	0.56	.....	0.26	6.7	5	11	8	12	nw.	J. B. Johnson.
Park Rapids	Hubbard	1,426	23	−0.7	− 3.6	34	1	− 38	12	49	0.23	− 0.55	0.09	2.3	5	12	6	13	nw.	Dr. P. A. Walling.
Pierz	Morrison	.....	.....	6.6	.....	35	1†	− 23	8	38	0.29	.....	0.20	2.0	3	13	10	8	nw.	E. H. Kerkhoff.
Pine River Dam	Crow Wing	1,251	26	2.6	− 2.2	36	1	− 3	12	52	0.18	− 0.50	0.14	4.0	2	22	7	2	n.	U. S. Engineer Corps.
Pokegama Falls	Itasca	1,280	26	1.6	− 1.7	38	1	− 42	12	46	0.24	− 0.53	0.16	3.2	4	16	8	7	nw.	Do.
Redlake	Beltrami	1,152	5	2.2	.....	37a	1	− 39a	7	43a	0.34	.....	0.18	3.4	3	15a	8a	7a	w.	A. C. Goddard.
Red Wing	Goodhue	680	17	.....	.....	.....	.....	.....	.....	.....	0.38	− 0.45	0.12	4.8	7	9	2	20	nw.	Louis Back.

TABLE 1.—*Climatological data for January, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Minnesota—Continued.																				
Redwood Falls	Redwood	1,050	6	14.4	.....	54	25	− 18	12	41	0.20	− 0.76	0.20	2.0	1	20	6	5	nw.	Hockett Brothers.
Reeds Landing	Wabasha	681	17	.....	.....	.....	.....	.....	.....	.....	0.18	− 0.33	0.06	6.2	6	7	0	24	nw.	John Deschneau.
Rochester	Olmstead	991	8	14.8	.....	47	25	− 16	13	52	0.19	.....	0.08	.....	3	9	10	12	nw.	Mary P. Leslie.
Roseau	Roseau	1,040	3	−6.0	.....	34	1	− 40	6†	53	0.53	.....	0.30	7.0	3	11	11	9	nw.	M. J. Hegland.
St. Charles	Winona	850	22	15.8	+ 2.8	43	25	− 16	12	36	0.42	− 0.72	0.13	2.9	6	16	4	11	se.	S. W. Gleason.
St. Cloud	Sherburne	1,020	36	10.0	+ 0.6	40	1†	− 24	12	48	0.42	− 0.29	0.24	6.4	5	15	9	7	nw.	State Reformatory.
St. Paul	Ramsey	940	42	13.8	+ 2.2	45	16	− 18	12	38	0.33	− 0.57	0.15	4.1	8	10	13	8	nw.	U. S. Weather Bureau.
St. Peter	Nicollet	825	18	15.2	+ 0.1	46	25	− 16	12	48	.....	.....	.....	.....	.....	7	15	9	s.	State Hospital.
Sandy Lake Dam	Aitkin	1,234	20	3.6	− 2.4	37	1	− 35	12	46	0.36	− 0.48	0.23	4.3	3	12	14	5	w.	U. S. Engineer Corps.
State Sanatorium	Cass	.....	5	3.9	.....	36[b]	1	− 34	12	41[b]	0.27	.....	0.15	2.8	3	19	2	10	w.	Dr. G. W. Beach.
Stillwater	Washington	694	7	.....	.....	.....	.....	.....	.....	.....	0.31	.....	0.20	6.0	2	18	5	8	n.	Oscar Ostrom.
Taylors Falls	Chisago	759	6	12.5	.....	41	1	− 28	12	43	0.41	.....	0.26	5.2	2	17	6	8	n.	Minneapolis Gen. Elec. Co
Thief River Falls	Pennington	1,137	2	−3.6	.....	32[a]	15	− 40	12	46[a]	0.53	.....	0.22	7.0	4	25	0	6	n.	E. W. Lown.
Tracy	Lyon	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. D. Davis.
Warren	Marshall	859	1	−1.1	.....	33	1	− 35	12	48	0.50	.....	0.15	6.5	5	2	21	8	.....	P. H. Holm.
Warroad	Roseau	1,069	3	−4.8	.....	28	16†	− 40	12	50	0.52	.....	0.30	7.0	3	22	0	9	n.	G. A. Sawyer.
Winnebago	Faribault	1,100	15	13.8	− 0.2	50	25	− 14	12†	40	0.08	− 0.77	0.08	1.0	1	15	9	7	sw.	H. H. Haight.
Winnibigoshish	Itasca	1,300	25	1.8	− 3.1	38	1	− 35	7	50	0.28	− 0.45	0.18	4.0	5	14	8	9	s.	U. S. Engineer Corps.
Winona	Winona	700	17	17.7	+ 5.9	49	17	− 17	11	40	0.62	− 0.50	0.14	6.6	9	15	5	11	nw.	P. C. Myers.
Worthington	Nobles	1,593	18	11.8	− 1.9	49	25	− 17	12	49	0.01	− 0.60	0.01	1.0	1	19	8	4	nw.	M. P. Mann.
Zumbrota	Goodhue	917	17	14.4	+ 0.3	41	16†	− 18	12	38	0.05	.....	0.05	1.4	1	13	13	5	nw.	W. C. Rowell.
South Dakota.																				
Milbank	Grant	1,148	22	9.2	− 2.3	55	17	− 22	12	50	0.61	+ 0.01	0.28	4.5	6	18	4	9	nw.	Miss Mary Patridge.
Sisseton	Roberts	1,202	7	9.3	.....	42[a]	27	− 23	11	43[a]	0.10	.....	0.07	2.5	2	20	....	11	nw.	George Gray.
Wisconsin.																				
Antigo	Langlade	1,489	19	13.8	+ 0.3	35	16	− 18	12	31	0.74	.....	0.30	7.4	6	17	0	14	w.	Elton C. Larzelere.
Barron	Barron	1,115	22	10.6	+ 0.3	38	1	− 25	12	38	0.33	− 0.79	0.14	4.5	6	12	13	6	sw.	Wm. A. Kent.
Beloit	Rock	750	47	23.8	+ 3.4	51	17	− 7	13	39	1.20	− 0.68	0.70	6.0	3	13	0	18	s.	Smith Observatory.
Big St. Germain Dam	Vilas	1,590	3	12.5	.....	40	17	− 18	12	37	0.87	.....	0.20	9.7	13	5	14	12	w.	Fred Hessen.
Brodhead	Green	812	15	21.8	+ 1.0	51	17	− 9	12	42	1.34	0.00	0.34	13.0	7	10	11	10	sw.	Hector D. Kirkpatrick.
Burnett	Dodge	880	9	18.2	.....	47	17	− 11	12	36	0.85	.....	0.60	12.0	5	7	6	18	nw.	George W. Smith.
Cornell	Chippewa	993	1	15.3	.....	38	1	− 15	12	40	0.19	.....	0.17	1.9	2	14	15	2	nw.	Brunet Falls Mfg. Co.
Cottage Grove	Dane	888	2	.....	.....	.....	.....	.....	.....	.....	1.54	.....	0.67	17.5	9	13	6	12	sw.	John E. Meilish.
Darlington	Lafayette	867	7	20.6	.....	51	17	− 12	12	40	1.00	.....	0.40	11.0	5	16	1	14	nw.	F. J. O'Neill.
Deerskin Dam	Forest	1,685	3	13.0	.....	42	17	− 19	13	39	0.35	.....	0.14	6.4	7	3	15	13	w.	Wm. E. O'Neal.
Delavan	Walworth	920	22	21.6	+ 2.4	50	17	− 11	13	40	1.09	− 0.51	0.30	12.8	7	10	7	14	s.	Elwood S. Austin.
Dodgeville	Iowa	1,220	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Thomas Gibbon.
Downing	Dunn	983	11	12.0	+ 0.9	40	17†	− 22	12	40	1.00	− 0.17	0.80	10.0	2	8	0	23	se.	Eugene F. Stoddard.
Eau Claire	Eau Claire	800	22	14.6	+ 1.5	41	1	− 18	12	37	0.49	− 0.51	0.21	6.3	6	4	15	12	nw.	Robert D. Whitford.
Glen Flora	Rusk	1,475	1	11.6	.....	39	1	− 24	12	39	0.75	.....	0.35	7.2	4	9	16	6	nw.	G. A. Durgin.
Grand Rapids	Wood	1,021	14	14.9	+ 1.6	44	17	− 17	12	37	1.08	0.00	0.51	12.7	6	10	8	13	w.	Willis B. Raymond.
Grantsburg	Burnett	1,095	22	10.9	0.0	45	1	− 32	12	45	0.75	− 0.36	0.40	7.5	3	15	10	6	nw.	T. M. Olsen.
Hancock	Waushara	1,091	21	17.4	+ 2.1	44	17	− 15	12	33	1.65	+ 0.41	0.30	14.0	8	11	8	12	nw.	Frederick B. Hamilton.
Hatfield	Jackson	973	19	14.1[b]	− 0.8	45[b]	17	− 20	8	43[b]	0.77	− 0.06	0.20	7.8	7	10	8	13	nw.	Walter S. Woods.
Hayward	Sawyer	1,107	22	11.8	+ 1.8	43	17	− 30	12	49	1.40	+ 0.36	0.30	14.0	9	12	7	12	sw.	A. E. Johnson.
Hillsboro	Vernon	1,000	22	15.6	+ 0.3	50	17	− 22	28	44	1.65	+ 0.24	0.50	16.5	7	11	12	8	sw.	Emil V. Wernick.
Koepenick	Langlade	1,683	22	15.6	+ 2.9	40	17†	− 17	12	40	1.00	− 0.35	0.20	10.0	9	.....	.....	.....	sw.	Edward S. Koepenick.
La Crosse	La Crosse	714	41	18.2	+ 3.0	51	16	− 10	12	32	0.89	− 0.19	0.28	14.9	9	7	9	15	nw.	U. S. Weather Bureau.
Lake Mills	Jefferson	897	22	20.6	+ 2.2	49	17	− 11	12	32	1.57	+ 0.02	0.60	13.6	12	8	11	12	nw.	S. Newton Dexter Smith.
Lancaster	Grant	1,070	22	19.1[e]	+ 2.6	50[e]	17	− 14[e]	12	41[e]	0.69	− 0.35	0.30	13.5	6	0[e]	7[e]	17[e]	nw.	Edward Pollock.
Long Lake	Oneida	1,592	5	10.6	.....	41	17	− 24	13†	46	0.59	.....	0.10	7.5	12	7	8	16	w.	Louis Frank.
Madison	Dane	974	44	19.4	+ 2.9	49	17	− 9	12	36	1.64	+ 0.08	0.68	16.2	9	6	12	13	nw.	U. S. Weather Bureau.
Marshfield	Wood	1,276	0	14.4	.....	43	17	− 19	12	46	0.88	.....	0.49	6.5	4	.....	.....	.....	nw.	Agr. Exper. Station.
Mather	Juneau	962	9	13.4	.....	44	16	− 15	12	42	1.57	.....	0.40	14.2	9	11	0	20	w.	Frank Evans.
Mauston	....do	882	17	17.6	+ 1.8	41	1	− 12	12†	31	0.80	− 0.26	0.20	11.5	8	9	9	13	nw.	Eugene L. Hitchcock.
Meadow Valley	....do	974	22	15.4	+ 1.7	45	17	− 16	12	38	0.48	− 0.32	0.12	13.0	7	8	14	9	nw.	Charles H. Johnson.
Medford	Taylor	1,420	24	13.6	+ 0.7	41	17	− 22	12	38	0.70	− 0.26	0.40	7.0	4	14	6	11	w.	Wm. Zeit.
Merrill	Lincoln	1,267	7	15.4	.....	42	17	− 13	12†	35	0.66	.....	0.36	7.0	7	17	0	14	nw.	A. W. Durr.
Minocqua	Oneida	1,604	9	11.8	.....	40	17	− 21	12	40	0.38	.....	0.10	3.5	8	6	14	11	w.	Benjamin W. Applebee.
Mondovi	Buffalo	738	5	15.2	.....	45	17	− 23	28	42	0.42	.....	0.10	9.5	8	13	9	9	nw.	Dr. Charles Hebard
Mount Horeb	Dane	1,226	9	18.6	.....	48	17†	− 11	12	37	1.99	.....	0.90	15.0	8	11	4	16	nw.	W. M. Lewis.
Muscoda	Grant	666	4	17.5	.....	52	17	− 15	28†	58	1.17	.....	0.51	16.0	6	17	6	8	nw.	Wm. Hessler.
Neillsville	Clark	996	23	14.7	+ 1.6	41	17	− 19	12	38	0.45	− 0.66	0.20	4.5	4	.....	.....	.....	nw.	Wm. Heaslett.
New Richmond	St. Croix	990	8	11.8	.....	42	1	− 24	12	41	0.60	.....	0.30	6.0	3	0	18	13	nw.	Franc A. R. Van Meter
Osceola	Polk	806	22	11.0	+ 1.0	40	1	− 23	12	42	0.40	− 0.60	0.15	7.3	7	5	18	8	n.	Charles W. Staples.
Park Falls	Price	1,492	22	11.6[e]	.....	40[a]	17	− 24[a]	12	40[a]	0.52	.....	0.13	8.0	9	9	12	10	n.	Flambeau Paper Co.
Portage	Columbia	809	24	19.4	+ 1.2	49	17	− 11	12	35	1.00	− 0.15	0.40	14.4	8	11	8	12	nw.	James H. Martin.
Port Edwards	Wood	969	3	13.4	.....	45	16	− 18	12	45	2.35	.....	0.50	19.0	8	11	10	10	sw.	Nekoosa-Edwards Pa. Co.
Prairie du Chien	Crawford	628	22	20.2	+ 1.9	51	16	− 14	12	51	0.78	− 0.44	0.40	12.0	7	9	5	17	s.	James A. Gillis.
Prairie du Sac	Sauk	750	5	19.4	.....	46	17	− 15	28	44	0.97	.....	0.42	11.2	9	11	12	8	nw.	Wis. River Power Co.
Prentice	Price	1,551	15	12.8	+ 1.5	37	17†	− 24	12	38	0.91	− 0.37	0.30	7.8	8	12	4	15	s.	Joseph G. Lash.
Rest Lake	Vilas	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. F. Miller.
Rhinelander	Oneida	1,550	7	14.0	.....	42	17	− 18	12	39	0.42	.....	0.09	10.2	9	13	1	17	sw.	Rhinelander Power Co.
Shullsburg	Lafayette	1,019	7	20.8	.....	50	17	− 11	12	34	1.57	.....	0.78	12.5	6	15	3	13	nw.	Harrison B. Chamberlin.
Solon Springs	Douglas	1,083	7	7.4	.....	40	1	− 33	12	54	0.50	.....	0.20	5.0	3	15	2	14	sw.	John M. Sayles.
Spooner	Washburn	1,104	19	9.5	− 1.7	38	17†	− 28	12	43	0.30	− 0.64	0.10	6.0	5	15	7	9	.....	Horace A. Bresee.
Stanley	Chippewa	1,082	9	14.5	.....	42	1	− 21	12	37	0.39	.....	0.30	4.0	4	17	5	9	nw.	W. Humphrey Scott.
Stevens Point	Portage	1,113	20	17.0	+ 2.2	45	26	− 16	12	32	0.80	− 0.24	0.40	7.0	2	13	8	10	nw.	Postmaster.
Sugar Camp Dam	Oneida	1,582	3	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	2.0	1	6	6	19	nw.	Lyman Haskins.
Tomahawk	....do	1,451	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Victor Extrom.
Trout Lake	Vilas	1,400	1	11.4	.....	37	1	− 18	12	35	0.40	.....	0.10	4.0	5	5[e]	6[e]	15[e]	nw.	F. B. Moody.
Twin Lakes Dam	....do	1,625	3	.....	.....	.....	.....	.....	.....	.....	0.42	.....	0.30	5.0	2	7	13	11	sw.	Albert D. Hansen.
Valley Junction	Monroe	930	21	15.5	+ 0.4	46	17	− 17	12	35	1.63	+ 0.61	0.41	12.0	12	7	9	15	nw.	Frederick Muermann.
Viroqua	Vernon	1,412	23	18.0	+ 2.3	47	17†	− 14	12	33	0.91	− 0.30	0.18	17.0	11	10	6	15	nw.	Henry E. Rogers.
Vudesare	Vilas	1,700	5	8.4	.....	39	15	− 24	10	40	0.85	.....	0.30	11.0	5	9	10	12	sw.	Louis L. Thomas.
Watertown	Jefferson	824	22	20.1	+ 2.0	48	16	− 10	12	39	1.80	+ 0.16	0.35	17.0	10	6	8	17	nw.	Charles J. Salick.
Waukesha	Waukesha	864	22	22.4	+ 3.0	50	17	− 9	12	34	1.40	− 0.07	0.45	14.0	6	3	22	6	nw.	Carroll College.
Wausau	Marathon	1,212	18	16.6	+ 1.8	41	17	− 15	12	32	0.41	− 0.75	0.14	7.0	4	15	10	6	nw.	Geo. H. Halder.
Weyerhaeuser	Rusk	1,207	11	9.2	.....	40	1	− 28	12	42	0.47	.....	0.20	6.4	6	14	10	7	nw.	Miss Etta Stiles.
Whitehall	Trempealeau	675	22	16.2	+ 2.1	43	25	− 17	28†	36	0.70	− 0.14	0.20	7.0	5	.....	.....	.....	nw.	Hans J. Haugh.

TABLE 1.—*Climatological data for January, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Iowa.																				
Albia	Monroe	959	15	22.4	− 1.3	55	16†	− 12	12	45	0.92	− 0.50	0.36	6.0	6	8	14	9	sw.	J. I. Chenoweth.
Algona	Kossuth	1,213	39	17.6	+ 4.3	51	25	− 14	12	37	0.20	− 0.59	0.08	5.0	5	19	9	3	nw.	Dr. F. T. Seeley.
Alta	Buena Vista	1,513	22	15.5	− 0.9	54	25	− 14	12†	47	0.20	− 0.44	0.12	2.5	5	15	10	6	nw.	David E. Hadden.
Amana	Iowa	721	37	22.9	+ 6.6	51	1	− 11	12	38	0.98	− 0.49	0.48	7.0	5	9	16	6	nw.	C. Schadt.
Ames	Story	926	37	20.9	+ 3.4	53	29	− 16	12	39	1.11	+ 0.19	0.70	10.0	4	11	13	7	nw.	Iowa State College.
Baxter	Jasper	998	13	21.6	+ 1.3	59	1†	− 15	12	45	0.72	− 0.16	0.40	11.1	7	16	8	7	sw.	W. R. Vandike.
Belle Plaine	Benton	886	23	22.6	+ 4.4	52	1	− 13	12	37	1.15	− 0.62	0.52	10.4	5	10	11	10	nw.	O. C. Burrows.
Belmond	Wright	1,184	3	16.8	.....	51	29	− 16	12	37	0.63	.....	0.30	6.1	6	2	18	11	nw.	Geo. P. Hardwick.
Bloomfield	Davis	881	6	26.5	.....	56	16	− 10	12	37	1.30	.....	0.32	9.8	6	14	0	17	nw.	Albert Power.
Bonaparte	Van Buren	.....	22	26.6	+ 3.4	56	16†	− 10	12	38	1.02	− 0.96	0.25	8.2	5	.....	.....	.....	.....	B. R. Vale.
Boone	Boone	1,134	8	17.6	.....	52	29	− 15	12	44	0.36	.....	0.22	9.0	3	16	3	12	.....	C. F. Henning.
Britt	Hancock	1,236	16	16.8	+ 0.8	50	25	− 16	12	37	0.06	− 0.62	0.03	0.6	4	12	12	7	s.	L. M. Goodman.
Buckingham	Tama	.....	13	.....	.....	.....	.....	.....	.....	.....	0.51	− 0.55	0.34	12.5	5	19	10	2	nw.	J. S. Guynn.
Burlington	Des Moines	544	17	26.2	− 0.8	55	16	− 7	12	40	1.70	− 0.28	0.50	11.6	7	14	12	5	s.	Max E. Poppe, jr.
Carroll	Carroll	1,265	23	17.6	− 1.4	54	29	− 15	12†	39	0.90	+ 0.09	0.50	9.0	5	14	6	11	nw.	Mrs. Jos. J. Wolfe.
Cedar Rapids	Linn	733	31	21.7	+ 3.5	50	1†	− 10	13	44	1.12	− 0.30	0.40	7.7	5	15	4	12	s.	R. S. Toogood.
Charles City	Floyd	1,015	22	16.5	+ 5.1	48	1	− 14	8	42	0.28	− 0.69	0.12	9.7	5	4	14	13	nw.	U. S. Weather Bureau.
Clear Lake	Cerro Gordo	1,241	15	17.7	+ 1.1	50	1†	− 15	11†	37	0.28	− 0.29	0.10	2.8	4	15	0	16	s.	Oscar Stevens.
Clinton	Clinton	593	46	25.1	+ 5.4	52	16†	− 7	12	34	1.10	− 0.82	0.40	9.1	9	6	16	9	sw.	A. E. Reid.
Columbus Junction	Louisa	595	12	26.5	+ 3.2	53	16	− 8	12	31	1.02	− 0.45	0.40	6.2	8	17	7	7	s.	J. B. Johnston.
Davenport	Scott	580	42	25.6	+ 4.8	55	16	− 7	12	34	1.04	− 0.53	0.43	7.4	9	7	12	12	sw.	U. S. Weather Bureau.
Decorah	Winneshiek	875	20	17.8	+ 2.3	49	17	− 12	12	39	1.22	+ 0.07	0.48	13.0	6	.....	.....	.....	.....	F. H. Baker.
Delaware	Delaware	1,083	22	20.2	+ 4.4	48	1	− 13	12	36	0.66	− 0.33	0.41	8.0	4	14	7	10	nw.	Nettie E. Ball.
Des Moines	Polk	861	35	23.5	+ 3.1	55	29	− 9	12	42	1.10	− 0.11	0.41	16.1	7	11	11	9	sw.	U. S. Weather Bureau.
Dubuque	Dubuque	639	40	22.7	+ 4.4	53	16	− 7	12	38	1.11	− 0.38	0.43	9.0	9	6	10	15	s.	Do.
Earlham	Madison	.....	11	22.4	+ 3.0	56	29	− 21	12	39	2.01	+ 0.93	1.00	17.5	6	18	7	6	nw.	George Phillips.
Elkader	Clayton	727	34	18.6	+ 3.8	50	16	− 16	8†	42	0.77	− 0.54	0.32	11.0	4	12	8	11	nw.	Chas. Reinecke.
Elma	Howard	1,182	3	16.6	.....	45	1†	− 16	8	36	0.23	.....	0.10	5.0	6	18	5	8	nw.	H. A. Moore.
Estherville	Emmet	1,298	18	14.0	− 1.0	58	25	− 15	12	46	0.30	− 0.26	0.10	3.0	4	.....	.....	.....	nw.	A. O. Peterson.
Fairfield	Jefferson	780	29	26.2	+ 8.6	53	17	− 10	12	40	0.92	− 0.78	0.31	7.9	8	21	4	6	s.	R. M. McKenzie.
Fayette	Fayette	1,003	23	18.1	+ 2.0	48	1†	− 16	8†	40	1.00	− 0.28	0.52	11.2	6	14	9	8	nw.	R. Z. Latimer.
Forest City	Winnebago	1,226	19	13.8	− 2.4	47	25	− 15	12	42	0.35	− 0.29	0.20	3.5	3	13	10	8	nw.	J. A. Peters.
Fort Dodge	Webster	1,126	13	16.0	− 1.1	53	25	− 15	12	44	0.60	− 0.04	0.30	5.0	3	.....	.....	.....	nw.	J. F. Monk.
Fort Madison	Lee	516	64	.....	.....	.....	.....	.....	.....	.....	1.30	− 0.66	0.50	8.0	4	.....	.....	.....	s.	Miss L. A. McCready.
Gilman	Marshall	1,052	14	.....	.....	.....	.....	.....	.....	.....	1.01	+ 0.18	0.50	10.1	4	.....	.....	.....	.....	J. L. Wylie.
Grand Meadow	Clayton	1,180	22	17.3	+ 1.8	46	1	− 17	12	32	0.76	− 0.41	0.30	7.4	6	7	16	8	nw.	F. L. Williams.
Grinnell	Poweshiek	1,023	21	23.0	+ 2.8	52	1	− 12	12	37	2.05	− 0.78	1.08	11.5	5	13	11	7	nw.	D. W. Brainard.
Grundy Center	Grundy	976	22	20.4	+ 3.5	50	1	− 17	12	36	1.30	+ 0.48	0.80	13.0	5	17	10	4	nw.	J. B. Calderwood.
Guthrie Center	Guthrie	1,077	18	22.0	− 0.7	52	29	− 18	12	42	0.74	+ 0.15	0.25	9.5	6	20	4	7	nw.	D. G. Beardsley.
Hampton	Franklin	1,155	23	18.4	+ 2.9	54	29	− 14	12	38	0.90	− 0.14	0.27	8.0	6	5	20	6	nw.	E. C. Grenelle.
Humboldt	Humboldt	1,095	25	18.8	+ 2.0	54	25	− 19	12	39	0.52	− 0.03	0.25	5.2	4	23	5	3	nw.	J. P. Peterson.
Independence	Buchanan	921	49	19.6	+ 4.4	48	1	− 15	12	39	1.38	+ 0.15	0.50	10.8	7	19	3	9	nw.	R. E. Dudley.
Indianola	Warren	969	22	24.4	+4.2	55	29	−12	12	39	1.45	+0.18	0.66	11.2	6	13	5	13	nw.	Prof. J. L. Tilton.
Iowa City	Johnson	683	53	22.0	+2.9	52	1	−12	12	52	1.19	−0.55	0.50	9.5	5	10	6	15	nw.	Prof. A. G. Smith.
Iowa Falls	Hardin	1,170	20	15.7	+0.5	48	25	−18	12	50	1.14	+0.24	0.35	9.7	7	18	6	7	nw.	J. B. Parmelee.
Jefferson	Greene	1,052	14	20.6	.....	57	29	−16	12	41	0.54	−0.28	0.30	5.1	5	12	11	8	nw.	Ora M. Hall.
Keokuk	Lee	614	42	28.4	+4.7	60	16	− 5	12	39	1.04	−0.65	0.50	4.5	8	7	19	5	s.	U. S. Weather Bureau.
Keosauqua	Van Buren	644	21	25.0	+1.9	57	16	−10	9	51	1.00	−0.37	0.25	7.5	6	7	10	14	.....	J. H. Landes.
Knoxville	Marion	920	18	23.3	+0.2	54	29	−10	12	37	0.90	−0.45	0.30	8.0	4	15	10	6	sw.	Casey and Belville.
Lacona	Warren	.....	14	.....	.....	.....	.....	.....	.....	.....	1.42	−0.25	0.62	8.0	7	11	15	5	.....	J. B. Alter.
Lansing	Allamakee	632	8	.....	.....	.....	.....	.....	.....	.....	1.03	.....	0.40	13.4	10	.....	.....	.....	.....	Chas. R. Serene.
Le Claire	Scott	576	13	.....	.....	.....	.....	.....	.....	.....	0.95	−0.48	0.40	5.5	11	.....	.....	.....	.....	Miss M. T. Disney.
Marshalltown	Marshall	947	21	18.6	−0.8	53	29	−14	12	47	1.13	+0.13	0.36	.....	9	10	10	11	nw.	Jacob Eige.
Mason City	Cerro Gordo	1,132	16	17.0	+1.9	48	25	−14	12	35	0.21	−0.94	0.16	2.1	2	16	6	9	nw.	J. S. Mills.
Monroe	Jasper	922	1	22.6	.....	50	1	−15	12	41	1.03	.....	0.65	13.6	4	17	4	10	nw.	J. A. Dibel.
Mount Pleasant	Henry	729	32	25.8	+4.8	52	17	− 7	12	35	1.21	−0.25	0.42	8.3	6	11	12	8	nw.	J. W. Edwards.
Muscatine	Muscatine	.....	53	.....	.....	.....	.....	.....	.....	.....	0.58	−1.33	0.17	10.2	6	.....	.....	.....	.....	William (Molis).
New Hampton	Chickasaw	1,169	16	17.2	+0.4	46	1	−15	12	33	0.82	−0.01	0.45	7.5	3	22	2	7	s.	A. F. Kemman.
Nora Springs	Floyd	1,064	....	19.0	.....	52	29	−16	8†	40	0.57	.....	0.33	3.7	3	15	10	6	s.	Arthur Betts.
Northwood	Worth	1,122	17	15.4	−0.9	49	25	−15	12	37	0.37	−0.48	0.20	3.7	5	17	8	6	nw.	Chas. H. Dwelle.
Olin	Jones	760	15	23.0	+2.4	51	16	−12	12	35	1.25	−0.43	0.55	7.0	3	14	10	7	nw.	Dr. F. W. Port.
Osage	Mitchell	1,184	26	17.2	+3.2	49	29	−14	12	37	0.50	−0.42	0.30	5.0	2	20	2	9	nw.	Lester Coonradt.
Oskaloosa	Nahaska	843	37	23.8	+4.6	52	1†	−15	12	36	0.89	−0.03	0.46	8.2	5	16	5	10	nw.	Joseph Boyd.
Ottumwa	Wapello	649	18	23.3	−1.2	55	29	−12	12	45	.....	.....	.....	.....	.....	17	8	6	nw.	Chester Potter.
Pella	Marion	877	11	23.6	+0.4	52	1†	−17	12	45	0.97	−0.15	0.32	11.3	5	26	0	5	s.	J. H. Ver Steeg.
Perry	Dallas	975	12	22.2	+1.5	56	29	−18	12	44	1.42	+0.60	0.80	13.5	4	10	18	3	sw.	S. J. Brumfield.
Pocahontas	Pocahontas	1,248	9	18.7	.....	54	25	−15	12	40	0.29	.....	0.14	2.6	4	25	2	4	s.	F. E. Hronek.
Rockwell City	Calhoun	.....	17	20.9	+1.1	53	1†	−12	12	35	0.70	0.00	0.50	2.0	2	23	1	7	.....	C. M. Randall.
Sac City	Sac	1,278	37	19.7	+2.3	53	25†	−14	12	34	0.55	−0.43	0.33	5.5	3	13	10	8	nw.	E. N. Baily.
St. Charles	Madison	1,070	12	24.3	+1.5	59	29	−13	12	43	1.23	+0.08	0.60	8.3	5	20	6	5	nw.	R. D. Minard.
Sigourney	Keokuk	877	17	24.6	+1.8	50	1†	−12	12	35	0.79	−0.80	0.36	8.9	7	.....	.....	.....	nw.	J. T. Parker.
Stockport	Van Buren	745	11	27.4	.....	57	17	−10	12	40	0.93	−0.71	0.31	9.0	8	13	13	5	s.	C. L. Beswick.
Storm Lake	Buena Vista	1,440	24	19.3	+1.9	54	25	−15	12	35	0.36	−0.35	0.18	3.7	3	20	4	7	nw.	Chauncy Case.
Tipton	Cedar	807	14	24.6	+4.0	52	17	− 8	12	33	1.31	−0.18	0.48	8.3	7	9	15	7	s.	F. K. Gregg.
Toledo	Tama	856	19	21.0	+1.9	49	1†	−15	12	39	1.30	+0.35	0.50	10.5	4	18	5	8	nw.	I. F. Giger.
Wapello	Louisa	588	15	27.2	+2.1	52	16†	− 6	12	36	0.47	−0.86	0.41	5.0	4	.....	.....	.....	nw.	G. W. Schofield.
Washington	Washington	769	31	25.6	+6.5	52	1†	−10	12	39	1.07	−0.49	0.48	8.0	6	7	16	8	sw.	Wm. A. Cook.
Waterloo	Black Hawk	862	30	19.0	+1.5	49	1	−13	12	50	0.57	−0.55	0.20	7.9	6	19	0	12	nw.	Ralph B. Slippy.
Waukee	Dallas	1,039	10	20.6	−0.2	54	29	−18	12	42	0.91	−0.77	0.40	12.3	6	19	7	5	nw.	Samuel F. Foft.
Waverly	Bremer	948	17	19.0	+1.1	48	1	−19	6†	40	0.70	−0.29	0.50	7.0	3	8	16	7	nw.	Earl C. Moore.
Webster City	Hamilton	.....	8	20.2	.....	50	25†	−18	12	38	0.55	.....	0.30	5.0	3	9	13	9	nw.	C. D. Carpenter.
West Bend	Palo Alto	1,197	20	17.6	+0.8	52	25	−15	12	43	0.17	−0.53	0.07	1.7	3	14	10	7	nw.	Phil. Dorweiler.
Whitten	Hardin	1,036	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. F. P. Butler.
Winterset	Madison	1,129	22	23.2	+1.8	53	29	−14	12	38	1.50	+0.59	0.80	13.0	5	10	7	14	nw.	Dr. R. S. Cooper.
Missouri.																				
Gorin	Scotland	700	25	.....	.....	.....	.....	.....	.....	.....	0.67	−1.02	0.20	4.9	6	7	10	14	sw.	J. W. Pulliam.
Hannibal	Marion	534	21	30.0	+3.3	59	16	− 1	12	34	1.66	−0.54	0.44	0.9	9	10	9	12	sw.	U. S. Weather Bureau.
Louisiana	Pike	500	36	31.3	+3.8	59	17	− 1	12	46	3.17	+1.11	0.80	1.6	9	12	2	17	n.	J. T. Farrel.
Macon	Macon	881	8	39.8	.....	59	16	− 3	12	34	1.51	.....	0.56	2.5	8	13	8	10	se.	Jno. A. Cook.
Mexico	Audrain	797	36	28.8	−0.2	59	17	0	12	54	3.40	+1.29	0.80	2.4	13	12	3	16	nw.	J. F. Llewellyn.
Palmyra	Marion	617	....	28.8m	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.0	....	5m	10m	3m	sw.	W. B. Markell.
Steffenville	Lewis	576	21	30.4	+2.3	59	16	− 6	12	38	1.17	−1.15	0.35	2.3	7	13	9	9	s.	Frank Hall.
Sublett	Adair	1,000	33	27.6	+1.2	61	19	− 9	10†	36	0.70	−1.03	0.40	7.0	4	8	18	5	nw.	Lewis Spriggs.
Vandalia	Audrain	776	2	31.4	.....	57	16	2	12	32	2.70	.....	1.50	1.0	5	13	8	10	s.	C. B. Ellis.
Warrenton	Warren	865	23	30.7	+1.2	63	19	3	12†	42	3.70	+1.09	0.95	0	14	6	8	17	s.	Prof. Jno. H. Frick.

TABLE 1.—*Climatological data for January, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Indiana.																				
Collegeville	Jasper		14	28.6	+1.9	58	17	− 3	9	38	2.96	+0.57	0.73	7.5	10	10	5	16	sw.	Otto Miller.
Knox	Starke	716	8	29.8	.....	54	17†	2	13	32	4.57	.....	1.25	6.8	16	4	8	19	s.	W. R. R. Tatman.
Laporte	Laporte	810	17	27.4	+2.3	51	19	4	13	35	3.21	+0.96	0.80	3.0	14	7[d]	6[d]	14[d]	sw.	Wm. M. Walton, jr.
Plymouth	Marshall	790	10	29.6	.....	53	17	2	29	32	3.27	.....	0.65	6.0	16	6	11	14	sw.	J. W. Siders.
South Bend	St. Joseph	726	20	29.6	+4.4	55	17	4	13	36	3.31	+0.58	1.06	6.5	18	4	10	17	s.	Henry H. Swaim.
Illinois.																				
Aledo	Mercer	738	13	26.8	+ 3.5	53	17	− 7	12	35	1.09	− 0.31	0.45	6.5	9	8	10	13	nw.	William B. Frew.
Alexander	Morgan	670	20	31.2	+ 3.9	55	17	2	12	39	3.18	+ 1.01	1.16	1.0	14	4	9	18	nw.	George H. Hall.
Antioch	Lake	861	12	24.1	+ 3.9	52	17	− 8	12†	35	1.81	+ 0.19	1.00	11.0	5	6	14	11	nw.	J. C. James.
Astoria	Fulton	650	14	28.3	+ 2.4	54	17	− 2	12	33	2.21	− 0.05	0.80	2.0	10	9	6	16	nw.	Edward V. Bohl.
Aurora	Kane	678	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. Holden.
Beardstown	Cass	448	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. L. M. Rice.
Bement	Piatt	700	6	31.9	.....	56	17†	4[a]	12	40[a]	5.20	.....	1.35	2.2	13	10	5	16	s.	N. N. Stevenson.
Bloomington	McLean	840	22	30.0	+ 4.6	53	16†	0	12	35	3.38	+ 1.23	0.88	3.5	10	8	9	14	nw.	Prof. H. N. Pearce.
Cairo	Alexander	359	41	40.2	+ 5.4	64	5	17	12	34	11.65	+ 7.83	3.53	0.3	11	8	4	19	s.	U. S. Weather Bureau.
Carbondale	Jackson	412	8	37.8	.....	60	19†	13	12	34	7.70	+ 5.01	1.62	2.2	15	10	6	15	nw.	State Normal University.
Carlinville	Macoupin	663	23	33.1	+ 4.2	59	20	4	12	39	3.86	+ 1.55	1.00	T.	10	12	5	14	n.	Blackburn College.
Carlyle	Clinton	470	28	.....	.....	.....	.....	.....	.....	.....	6.21	+ 3.38	1.75	T.	13	.....	.....	.....	.....	Hervey O. Jones.
Chester	Randolph	380	21	.....	.....	.....	.....	.....	.....	.....	9.78	+ 6.86	2.10	.....	18	.....	.....	.....	.....	Charles S. Gollon.
Clinton	Dewitt	727	3	30.9	.....	55	17	1	12	39	4.40	.....	1.72	0.8	13	10	7	14	sw.	J. Frank Ziegler.
Coatsburg	Adams	763	21	29.2	+ 4.0	56	16†	− 3	12	33	1.65	− 0.58	0.56	2.6	10	7	6	18	s.	Dr. J. R. Lambert.
Cobden	Union	656	30	38.9	+ 4.9	68	17	12	12	37	8.13	+ 4.55	1.85	0.5	13	14	3	14	sw.	John Buck.
Dakota	Stephenson	929	8	23.2	.....	50	17	−10	12	32	1.45	.....	0.46	11.5	8	9	10	12	nw.	Elmer G. Smith.
Decatur	Macon	685	22	32.0	+ 5.5	56	17†	3	12	41	5.19	+ 2.66	1.25	2.2	16	9	9	13	nw.	Prof. J. H. Coonradt.
Dixon	Lee	725	23	24.8	+ 4.5	53	16	− 6[a]	12	34[a]	0.94	− 0.98	0.40	3.0	4	9	8	14	.....	H. U. Bardwell.
Du Quoin	Perry	459	25	36.9	+ 4.9	63	20	12	12	39	7.11	+ 4.42	2.29	2.1	14	13	3	15	sw.	G. H. Knetzger.
Dwight	Livingston	600	20	28.9	+ 3.2	54	17	− 2	12	40	2.59	+ 0.46	0.57	4.6	13	7	3	21	s.	Edward O. Welch.
East St. Louis	St. Clair	481	2	.....	.....	.....	.....	.....	.....	.....	4.94	.....	0.96	0	13	.....	.....	.....	.....	W. Mc. K. Brown.
Edwardsville	Madison	554	14	.....	.....	.....	.....	.....	.....	.....	4.90	+ 2.36	1.30	0	11	.....	.....	.....	.....	W. H. Morgan.
Elgin	Kane	716	6	26.2	.....	53	17	− 6	12	35	1.53	.....	0.55	8.8	8	2	13	16	nw.	Elgin Observatory.
Ewing	Franklin	449	1	.....	.....	.....	.....	.....	.....	.....	8.17	.....	1.56	0.2	14	.....	.....	.....	.....	Ewing College.
Fairview	Fulton	733	2	.....	.....	.....	.....	.....	.....	.....	1.57	.....	0.66	.....	.....	.....	.....	.....	.....	Abram Wilson.
Galva	Henry	842	21	26.0	+ 4.2	54	17	− 7	12	34	1.31	− 0.41	0.60	5.1	10	11	4	16	s.	Prof. F. U. White.
Grafton	Jersey	422	20	.....	.....	.....	.....	.....	.....	.....	5.99	+ 3.64	2.00	0.5	16	.....	.....	.....	.....	R. C. Goodrich.
Greenville	Bond	635	35	34.6	+ 5.5	59	19†	7	12	37	5.01	+ 2.18	1.37	T.	11	12	7	12	s.	H. W. Reidemann.
Griggsville	Pike	650	28	30.8	+ 3.9	56	17	0	12	37	2.26	+ 0.19	0.69	0.2	5	12	6	13	nw.	Geo. F. Kneeland.
Havana	Mason	475	21	28.4[e]	+ 1.5	55[e]	17	− 1[e]	12	33[e]	1.21	− 0.90	0.25	1.4	9	10	8	13	nw.	L. L. Eutenener.
Henry	Marshall	500	25	28.6	+ 5.4	55	16	− 4	12	42	1.69	− 0.19	0.65	6.8	9	13	6	12	sw.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	19	34.3	+ 3.9	60	19	5	12	36	6.84	+ 4.20	2.23	T.	11	11	1	19	s.	Ira L. Woodward.
Joliet	Will	609	22	26.7	+ 2.7	54	17	− 3	12	34	1.59	− 0.36	0.40	6.5	9	11	9	11	sw.	F. M. Muhlig.
Kishwaukee	Winnebago	730	25	23.8	+ 3.8	53	17	− 9	12	34	0.67	− 1.46	0.32	7.7	9	4	14	13	s.	George Stevens.
La Grange	Cook	657	21	25.6	+ 2.7	50	16†	− 4	12	29	1.10	− 0.74	0.45	5.3	7	7	8	16	w.	Prof. F. E. Sanford.
La Harpe	Hancock	698	34	27.8	+ 4.0	58	16	− 6	12	38	1.14	− 1.19	0.55	6.5	4	15	10	6	nw.	Geo. E. Campbell.
Lanark	Carroll	883	24	23.6	+ 3.5	47	16†	− 9	12	37	0.91	− 0.53	0.45	10.8	8	17	5	9	s.	M. N. Wertz.
La Salle	Lasalle	536	8	27.2	+ 4.9	57	17	− 3	12	29	1.29	− 0.87	0.77	5.2	11	4	10	17	sw.	U. S. Weather Bureau.
Lincoln	Logan	575	25	31.2	+ 4.2	55	17	1	12	40	3.63	+ 1.32	1.28	1.2	13	13	6	12	s.	Prof. C. S. Oglevee.
Macomb	McDonough	700	9	.....	.....	.....	.....	.....	.....	.....	1.11	.....	0.62	3.0	6	.....	.....	.....	.....	State Normal University.
Manteno	Kankakee	711	2	.....	.....	.....	.....	.....	.....	.....	2.63	.....	0.67	3.4	15	9	10	12	sw.	J. F. Schmeltzer.
Martinton	Iroquois	633	26	29.0	+ 5.1	53	17†	0	12	40	3.38	+ 1.31	1.06	3.5	11	4	14	13	sw.	Joseph H. Peltier.
Mascoutah	St. Clair	425	23	36.5	+ 5.4	61	19†	10	12	37	5.10	+ 2.50	1.65	T.	10	12	10	9	nw.	Geo. Henrich.
Minonk	Woodford	745	20	28.6	+ 4.7	54	17	− 3	12	36	2.00	+ 0.22	0.59	6.0	12	7	10	14	w.	John C. Danforth.
Monmouth	Warren	784	21	27.2	+ 4.4	53	16	− 7	12	34	1.66	− 0.30	0.70	9.5	6	10	7	14	s.	Dr. J. C. Hutchison.
Morris	Grundy	518	2	28.4	.....	56	16†	− 3	12	40	1.52	.....	0.68	4.0	10	3	11	17	w.	E. G. Cryder.
Morrison	Whiteside	685	19	25.0	+ 4.2	53	17	− 8	12	32	1.00	− 0.61	0.39	6.3	10	11	11	9	w.	S. A. Maxwell.
Morrisonville	Christian	638	14	32.4	+ 4.0	58[a]	19	4	12	39[a]	4.84	+ 2.49	1.38	0.8	14	9	7	15	s.	J. D. Lowis.
Mount Vernon	Jefferson	511	19	34.2	+ 2.0	57	16†	10	22	34	8.76	+ 5.58	1.70	1.0	14	5	3	23	n.	Theodore P. Stelle.
Nashville	Washington	503	13	.....	.....	.....	.....	.....	.....	.....	7.57	+ 5.00	1.35	T.	13	.....	.....	.....	.....	H. M. Potter.
Oregon	Ogle	702	4	24.6[a]	.....	52[a]	17	− 9[a]	12	39[b]	0.98	.....	0.50	6.8	6	5	9	17	s.	Samuel Ray.
Ottawa	Lasalle	500	27	28.6	+ 4.8	55	16†	− 2	12	40	1.80	− 0.31	0.71	5.5	9	12	1	18	nw.	Miss Maude M. Harris.
Pana	Christian	692	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. G. N. Gilbert.
Pawpaw	Lee	930	1	.....	.....	.....	.....	.....	.....	.....	1.28	.....	0.60	3.9	6	.....	.....	.....	.....	A. C. McBride.
Peoria	Peoria	609	57	27.8	+ 4.7	54	17	− 3	12	30	2.18	− 0.02	0.62	7.3	13	8	7	16	s.	U. S. Weather Bureau.
Pontiac	Livingston	546	11	29.6	+ 4.3	55	17	− 1	12	41	3.03	+ 0.61	0.69	8.0	12	4	9	18	sw.	Geo. Butterworth.
Quincy	Adams	481	7	28.9	.....	57	16	− 1	12†	43	1.66	.....	0.72	1.8	9	.....	.....	.....	.....	Fred J. Brinkoetter.
Riley	McHenry	956	54	24.6[b]	+ 6.1	51[b]	17	− 9[b]	12	36[b]	1.02	− 0.83	0.35	5.7	9	5	11	15	sw.	John West James.
Roberts	Ford	774	2	.....	.....	.....	.....	.....	.....	.....	2.80	.....	1.18	3.9	13	11	9	11	s.	R. E. Bradbury.
Rockford	Winnebago	763	21	24.4	+ 3.8	52	17	− 9	12	33	1.30	− 1.12	0.41	9.7	10	9	9	13	.....	Dr. John R. Porter.
Rushville	Schuyler	670	22	29.8	+ 3.8	55	17	− 1	12	34	0.94	− 1.06	0.50	0.5	6	6	8	17	s.	H. F. Dyson.
St. Charles	Kane	700	18	26.5	+ 4.3	53	17	− 5	12	34	1.25	− 0.62	0.48	7.3	8	5	13	13	s.	Dr. Wm. H. Bishop.
St. Peter	Fayette	500	11	34.4	+ 3.4	60	20	9	12	32	6.46	+ 3.99	1.37	T.	13	7	9	15	nw.	M. L. Lansford.
Sparta	Randolph	538	27	35.0[a]	+ 2.7	64[a]	19†	9[a]	12	35[b]	10.69	+ 7.95	2.20	0.5	18	14	0	17	nw.	James A. Caldwell.
Springfield	Sangamon	644	33	30.6	+ 4.3	56	19	3	12	34	3.55	+ 1.30	1.10	0.8	14	5	7	19	s.	U. S. Weather Bureau.
Streator	Lasalle	626	20	27.2	+ 2.8	54	16	− 3	12†	36	1.76	− 0.22	0.63	3.3	14	10	5	16	sw.	Miss Lora Sweetser.
Sullivan	Moultrie	530	13	32.2	+ 4.2	56	17†	5	12	38	6.22	+ 3.54	1.50	1.5	13	5	14	12	nw.	C. A. Corbin.
Sycamore	Dekalb	855	33	25.6[b]	+ 6.0	56[d]	17	− 9	12	44[d]	0.38	− 1.40	0.20	3.9	4	19	3	9	w.	Geo. E. Valentine.
Tiskilwa	Bureau	798	29	.....	.....	.....	.....	.....	.....	.....	1.46	− 0.55	0.74	4.5	5	.....	.....	.....	.....	F. I. Smucker.
Walnut	...do	717	22	26.8	+ 4.1	53	17	− 7	12	43	1.30	− 0.50	0.65	6.2	9	8	13	10	s.	O. C. Nussle.
Warsaw	Hancock	501	15	.....	.....	.....	.....	.....	.....	.....	0.97	− 0.98	0.45	4.0	3	.....	.....	.....	.....	W. R. Kirkbride.
Waterloo	Monroe	719	2	.....	.....	.....	.....	.....	.....	.....	5.89	.....	1.98	T.	13	.....	.....	.....	.....	Prof. Jas. E. Raibourn.
White Hall	Green	573	5	32.1	.....	58	16	3	12	37	4.60	+ 2.05	1.22	0.2	13	16	2	13	ne.	Frank Dillman.
Windsor	Shelby	681	14	34.0	+ 6.9	60	20	6	12	38	.....	.....	.....	0.7	.....	8	10	13	s.	Herbert Rose.
Winnebago	Winnebago	900	26	23.4	+ 3.2	52	17	−10	12	32	1.12	− 0.79	0.40	8.5	5	13	5	13	w.	Frank Osborn.
Yorkville	Kendall	584	26	26.1	+ 4.7	54	17	− 6	12	32	0.37	− 1.45	0.10	2.6	9	6	8	17	w.	Herman A. Grimwood.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 5, Upper Mississippi Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
North Dakota.																															
Amenia	Red										.15			T.				T.								.05	.05	.20	.05	.10	.10		0.70
Bottineau	Mouse		.05			.02						.02		.02	.01		.01	.01		.03		.02			.01	.02	T.	.01	.03	.03	.01		0.30
Bowbells	do																															
Cando	Sheyenne										.05															.02				.02		0.09
Crosby	Mouse	T.									.08		.04	T.	.10	T.	.10		T.						T.			.19				0.51
Devils Lake	Sheyenne	.01	T.	.01							.08		.01				.02	T.						T.		.05	T.	.16	.02	T.	.02		0.38
Donnybrook	Mouse	.10														.05									.20			.02	.03	.50			0.90
Dunseith	do										T.		T.	.04			T.	T.	T.											.05		0.09
Eckman	do																															
Edmore	Sheyenne																															
Fessenden	James											.11		T.				T.								.03	.02	.03	T.	T.	.17		0.36
Forman	Sheyenne										.02			.50														.01					0.53
Grafton	Red			.09									.11						T.							.01	T.	.01		.02		.11	0.35
Granville	Mouse																	T.	.20						T.	.20		T.	.10				0.50
Hannah	Pembina																															
Hansboro	Red										.04							.07			.05							.20				0.36
Hillsboro	do										.05	.10		.05				T.								.05		.20	.10	.10	.05	.10	0.80
Lakota	Sheyenne	T.			T.					T.	.04			.02			.01	.01								T.		.16	.02		.08		0.34
Langdon	Pembina																															
Larimore	Red				T.							.09		.03				.30		.03		.01				.01	.02	.07	.01	.02	.01	.09	0.69
Lisbon	Sheyenne		T.		T.								T.	T.													.05	T.		T.	.60		0.65
McKinney	Mouse	T.									T.						.05								.10					.30			0.45
McLeod	Sheyenne																										.30			.30			0.60
Manfred	do		T.		T.						.25		T.				T.	.05								.05	T.	.05		.20	T.		0.60
Mayville	Red											.08	T.				T.											.14		.02		0.24
Milnor	do			T.										T.												T.	T.	T.		.18	.21		0.39
Minot	Mouse																															
Minto	Red										T.															.08			.03		.02		0.13
Oriska	Sheyenne			T.							.05									.05						T.	T.	T.	T.	.10	.13		0.33
Park River	Red		.02								T.	.01					.09					.01				.08		.05	.05				0.31
Pembina	do		.10																											.15	.15		0.40
Power	Sheyenne										.10		.10						.10							.10				.40	.10	.10	1.00
Towner	Mouse	T.									.05		T.				.02										.03		T.	.05			0.15
University	Red		T.								.02	.06		T.				T.		.15				T.		T.		.02	T.		.02		0.27
Wahpeton	do				T.									T.														.10			.18		0.28
Walhalla	Pembina											.05					.20				.10				T.				T.			.30	0.65
Westhope	Mouse										.02		.03															20		.02			0.27
Willow City	do	T.			T.						.05		T.				T.							T.	T.			.30	.20	.05	T.		0.60
Minnesota.																																
Albert Lea	Mississippi		T.			T.		.10									T.		T.								.15	T.			T.	T.	0.25
Alexandria ‖	do			.02								.02		.03				.03	.08							.02	.02	.10	.05	.06	.25	T.	0.68
Angus	Red		T.								.05			.05				.02		.05		T.				T.	T.	T.	.05		.02		0.24
Bagley	do		T.								.10									T.									.37		T.		0.47
Baudette	Rainy			T.		T.				T.		.12		T.				.15		.05		.08	.05							.12	T.		0.57
Beardsley	Minnesota			T.							T.								.18								T.	T.			.30	T.	0.48
Beaulieu ‖	Red																															
Bemidji ‖	Mississippi				.02															.03					.02					.07			0.14
Bird Island	Minnesota		T.	T.								T.		.03					.04								T.	.01		T.	T.		0.08
Brainerd	Mississippi																									.15	.01	T.		.23	.02		0.41
Caledonia ‖	do			.02		.18	.15	.12				T.	T.		.03	.01		T.	.04						.04			T.	.10	.22		.03	0.94
Campbell ‖	Red		T.	T.										.08	T.			T.		T.						T.	.08	.22			.45		0.83
Cass Lake ‖	Mississippi			T.								T.		T.			T.						T.			.10			.13				0.23
Collegeville	do		T.											.08					.12									.06		.07	.18		0.51
Crookston ‖	Red											.15		.05				.05								T.		T.		.10			0.35
Detroit ‖	do			T.								.02		T.				T.		T.						.05	.07		T.	.05	.20	T.	0.39
Ely	Rainy	T.	T.	.01								.08		.02			T.	.02		T.		.01	T.	T.	T.	T.				.06	.01		0.21
Fairmont (near)	Minnesota			T.		T.		T.						T.			T.		T.										T.	T.	T.		T.
Faribault ‖	Mississippi														T.													.05			.10		0.15
Farmington	do		T.	T.				T.			T.			T.			T.		.02										T.	T.			0.20
Fergus Falls	Red		.03	T.								.02		.03				.03								.03	.08	.17	.08	.22	.16	.11	0.96
Fort Rinley ‖	Mississippi													.02						T.						.06	T.	T.	.02	.06	.07		0.23
Fosston	Red									.06											T.		T.			T.		T.		.25			0.31
Glencoe	Mississippi		T.																T.									T.			T.		T.
Grand Meadow	do		T.	T.		T.	.04	.07	.05					T.					T.								.03	.02			T.		0.21
Gull Lake Dam	do		T.									T.		.04												.08	.03			.06	.11		0.32
Hallock	Red																		T.			.10			.05	T.			.10	.05	.05		0.35
Halstad ‖	do											.19						.06															0.25
Hinckley	St. Croix																	.15												.22			0.37
International Falls	Rainy														.02			.10		.10			.10		.10					.02			0.44
Itasca State Park	Mississippi																												.10				0.10
Lake Crystal	Minnesota	T.	T.							T.			.05			T.		.10									T.			T.			0.15
Leech Lake Dam	Mississippi		.01									.02		.03				.01		T.						.03				.28	T.		0.28
Littlefork	Rainy																	.34					.17										0.51
Long Prairie	Mississippi																															
Lynd	Minnesota																		T.									T.			T.		T.
Mankato ‖	do														T.				.02										.01		T.		0.
Manlenlain	Mississippi		.01	T.							.02			.03			T.	T.	.04	T.		T.					.01	.10	.03	.04	.12	T.	0.
Milaca	do																															
Milan	Minnesota													10				T.	.20									T.		.05	T.		
Minneapolis	Mississippi		.01								.02			.01			T.	T.	.03			T.				T.	.01	.08	.05	.10	.11		
Montevideo ‖	Minnesota		T.			T.						T.		.01					.06								T.		T.		.02		0.09
Moorhead	Red		T.	.01	T.						.03			.02				.03		T.				T.	.06	.02	.04	.06	.06	.08	.04		0.45
Mora	St. Croix		.03	T.							T.	.03		.07					.07							.07	T.			.20	.05		0.52
Morris	Minnesota											.01		.02					.20								T.	.15	T.	.20				0.58
New London	Mississippi													.08					.16									.08		.05				0.37
New Richland	Minnesota		T.	T.		T.	.06							.02					.02									.02			T.			0.12
New Ulm ‖	do		T.	T.										.05	T.			T.	.05	T.							T.		.02		.10	.05	0.27
Osakis	Mississippi		T.									T.		.03				T.	.05							T.		.15	T.	.07	.26		0.56
Park Rapids ‖	do													.04												.06	.02		.09			.02	0.23
Pierz	do																		.04									.05		.20			0.29
Pine River Dam	do											T.														.04				14			0.18
Pokegama Falls	do		T.									.02		.04				T.								.02				.16	T.	T.	0.24
Red Lake	Red									T.	.18		T.					.10		T.		.06							T.		T.		0.34
Red Wing ‖	Mississippi			T.			.06				.02				T.				.02										T.	.06	.08	.02	.12	0.38
Redwood Falls	Minnesota																												T.		.20			0.20
Reeds Landing ‖	Mississippi			T.			.01		.04										.01											.05	.06	.01		0.18
Rochester ‖	do							.04		.07																	.08						0.19

TABLE 2.—*Daily precipitation for January, 1913. District No. 5*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota—Con.																																
Roseau ‖	Red	T.			T.		T.										.15			T.				T.	.08				.30	T.	T.	T.	0.53
St. Charles	Mississippi		T.				.01	.12				T.		T.					.02								.13	.09		.05	T.	T.	0.42
St. Cloud	do													.01					.12							T.	.01	.04	T.	T.	.24		0.42
St. Paul	do		.01								.02			.01					.02								T.	.06	.06	.07	.08		0.33
St. Peter	Minnesota																															
Sandy Lake Dam	Mississippi		T.								T.			.06												.07			.23		T.	0.36
State Sanatorium	do		T.									.07		T.				T.								.05			.15			0.27
Stillwater ‖	St. Croix														T.			T.	T.				T.			T.			.11		.20	T.	0.31
Taylors Falls	do										T.		T.																.26	.15			0.41
Thief River Falls ‖	Red												.15	.08															.08			.22	0.53
Tracy	Minnesota																															
Warren	Red	.15																								.08			.08	.08	.11		0.50
Warroad	Rainy																				.04				.18				.30	T.			0.52
Winnebago ‖	Minnesota	T.	T.	T.			T.	T.	.08					T.		T.		T.									T.	T.	T.			T.	0.08
Winnibigoshish	Mississippi											.04		.03			T.	.01		T.						.02			.18				0.28
Winona	do		T.	T.		.02	.02	.12				T.		.02					.02								.14	.10		.13	.05	T.	0.62
Worthington ‖	Des Moines						T.	T.			T.			T.		T.			.01								T.		T.		T.	T	0.01
Zumbrota	Mississippi		T.	T.				T.						T.			T.		T.	T.							.05		T.	T.	T	0.05
South Dakota.																																
Milbank ‖	Minnesota				T.							.03		.14					.28								T.	T.	.03		.10	.03	0.61
Sisseton ‖	do																	.07														0. .0
Wisconsin.																																
Antigo	Wisconsin		T.	T.			.02	T.						T.			T.									.02	.05			.05	.30	.30	0.74
Barron	Chippewa			.02								T.		.02			T.		.02							.04	T.			.09	.14		0.33
Beloit	Rock							.70																					.20				1.20
Big St. Germain Dam	Wisconsin			.08	.01	T.	.05	.04				.03		.07				T.	.06			.03				.05	.06			.09	.10	.20	0.87
Brodhead	Rock		T.			.15	.15	.30																34				.10		.20		.10	1.34
Burnett	do		T.	T.		*	T.	*	.24	T.	T.	T.		T.	T.	T.	T.		T.					60			T.	.01		T.	T.	T.	0.85
Cornell	Chippewa		T.	T.			T.	T.			T.	T.					T.		T.			T.								.02	.17	T.	0.19
Cottage Grove	Rock		T.			.16	.02	.35	.09	T.				T.			T.				T.			67				.08	.02	.13		.02	1.54
Darlington	do					.10	.10	.30																40					.10				1.00
Deerskin Dam	Wisconsin			.14	T.			.06			T.	.02		.03					T.		T.					T.	T.			.03	.02	.05	0.35
Delavan	Rock			T.		.20	.15	.24				T.					T.				T.			30				.12		.05		.03	1.09
Dodgeville	do																															
Downing	Chippewa		T.	T.							T.			T.			T.					T.				T.	T.	T.	.20	.80		1.00
Eau Claire	do		T.	.02			T.	.06	T.			T.		T.			T.		.04							T.	T.	.01		.15	.21	T.	0.49
Glen Flora	do		T.					T.						.10			T.		T.							.10	T.			.20	.35	T.	0.75
Grand Rapids ‖	Wisconsin						.23		.24										.06								.02	T.		.02		.51	1.08
Grantsburg	St. Croix				.15												T.													.20	.40		0.75
Hancock	Wisconsin			.10		.20	.10	.30	.20								T.													.20	T.	.30	1.65
Hatfield	Black			.05		.10													.10								.02			.20	.20	.10	0.77
Hayward	St. Croix		T.											.30	.10				.20		.10	.05				.10				.15	.30	.10	1.40
Hillsboro	Wisconsin		T.	T.		.20		.50				T.		T.			T.		.10					.20			T.	.30		.20	.15	T.	1.65
Keepenick	do			.20			.10	.10				.10							.10							.10	.10				.10		1.00
La Crosse	Mississippi		.01	T.		.11	.01	.23				T.		T.			T.	T.	.04				T.	T.			.04	.10		.28	.07	T.	0.89
Lake Mills	Rock		.02	.01		.14	.10	.15	T.	T.				.01			.02	.02			T.		T.	.60				.20		.16		.14	1.57
Lancaster	Mississippi					.09	.20																	.30				.07		.02		.01	0.69
Long Lake	Wisconsin			.06	T.		.06	.03	T.			.01		.10			T.	T.	.04			.02				.04	.04			.06	.05	.08	0.59
Madison	Rock	T.	T.			.10	.03	.68		T.	T.	T.		.01	T.		T.	T.	T.		T.		.05	.39			T.	.22		.12	.04	T.	1.64
Marshfield	Wisconsin			T.		T.	T.	.09									T.									T.	T.			.15	.15	.49	0.88
Mather ‖	do			.02			.40	.05	.30										.10								.15		.05	.30		.20	1.57
Mauston	do					.10		.20											.05					.10			.20	.05		.05		.05	0.80
Meadow Valley	do				T.	.07	.01	.09											.05								.12	T.		.12	.02		0.48
Medford	Black							T.					T.	.10	T.												T.			.10	.40	.10	0.70
Merrill	Wisconsin			T.			*	.10				T.							T.							.10	.10			*	*	.36	0.66
Minocqua	do			.04	T.		T.	T.	T.			.03		.04				.04	.02			T.				T.	.04			T.	.10	.07	0.38
Mondovi	Mississippi			T.			.01	.10	.02										.03								T.	.03		.10	.09	.04	0.42
Mount Horeb	Rock			T.		.12	T.	.32	.10			T.		T.	T.								.10	.90				.15		.20	T.	.10	1.99
Muscoda ‖	Wisconsin			T.			.13	.08	.20					T.										.51					.15	.10	T.		1.17
Neillsville	Black			T.		T.		.10									T.		.10									.05		*	*	.20	0.45
New Richmond	St. Croix		T.													T.											T.	.10		.20	.30		0.60
Osceola	do		T.								.01		T.	T.					.02			.02					T.	.03	.15	.05	.12		0.40
Park Falls	Chippewa		T.	.05			T.					.05		.09				T.	.05			T.			.05	.02			.04	.13	.04	0.52
Portage	Wisconsin		T.	.01		.11		.19				T.		T.			T.		T.					.40			.02	.09		.08	T.	.10	1.00
Port Edwards	do			.05		.50	.10	.20								T.	T.		.10				T.	T.			.45		.15		.80		2.35
Prairie du Chien ‖	Mississippi						.06	.08	.40						.04									.14				T.	.02	.04			0.78
Prairie du Sac	Wisconsin			T.		.08	.02	.08	.02					.02										.42				.07		.19		.07	0.97
Prentice	Chippewa		T.			.03	T.	T.						.05					.03			T.				.14	.11			.09	.16	.30	0.91
Rest Lake	do																															
Rhinelander	Wisconsin			.03			.04	.02	T.			T.		.09					.04								.06			.01	.08	.05	0.42
Shullsburg	Mississippi				T.	*	.15	.55		T.								T.						.78					.05			.04	1.57
Solon Springs	St. Croix			T.							T.			T.					T.											.20	.20	.10	0.50
Spooner	do	T.		T.								T.		.05					.05			T.				.05			.05		.10		0.30
Stanley	Chippewa		T.					T.	.02					T.		T.	T.	T.									T.			.05	.30	.02	0.39
Stevens Point	Wisconsin					T.	T.	.40									T.									T.	T.			*	*	.40	0.80
Sugar Camp Dam	do			T.				T.				T.		T.	T.		T.		T.			T.				T.	T.			T.	T.	.20	0.20
Tomahawk	do																															
Trout Lake	do		T.	.05		T.		T.								T.						.05					.10			T.	.10	.10	0.40
Twin Lakes Dam	do			T.		T.						T.	T.	T.				T.									T.				.12	.30	0.42
Valley Junction	do		T.	.08		.20		.33	.05			T.		.01			T.		.10					.03			.41	.20		.13	.05	.04	1.63
Viroqua	Mississippi					.16	.02	.18	.02					.03					.02					.13			.08	.12		.08	.07		0.91
Vudesare	Wisconsin		T.	.15		T.	T.	T.	T.							.25	T.													.05	.10	.30	0.85
Watertown ‖	Rock		.05	T.			.25	.10	.35			T.		T.	T.			.05	T.		T.			.35	.15			T.	.15	.20		.15	1.80
Waukesha	Fox		T.	T.			.20	.45	.20			T.							T.		T.			.25					.10	.20		T.	1.40
Wausau	Wisconsin			T.			T.	T.	.10			T.		T.				T.	T.							T.	T.			.05	.14	.12	0.41
Weyerhaeuser	Chippewa			.01								T.		.03			T.		.04			T.				.04	T.			.15	.20		0.47
Whitehall	Mississippi							.20									T.		.10								T.	.10		.20	.10		0.70
Iowa.																																
Albia ‖	Des Moines				.20	.10	.10	.10	.06				T.									T.		.36					T.			T.	0.92
Algona	do					.03		.08						.06					.02								.01			T.		.20	
Alta ‖	Raccoon					.02	.04	.04	.08						T.				.02									T.				.20	
Amana	Iowa					.05	.13	.29	.03					T.							T.			.48				T.				.98	
Ames ‖	Skunk				T.	.25		.70						T.			.02		T.				T.	.14				T.			T.	1.11	

TABLE 2.—*Daily precipitation for January, 1913. District No. 5*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa—Continued.																																	
Baxter	Skunk				.01	.03	.06	.18						T.			.02		T.		.02			.40							T.	.72
Belle Plaine	Iowa					.05	.10	.45	T.															.52					.03			1.15
Belmond	do					.30		.20						.02					.02					.05					.04			.63
Bloomfield	Mississippi				.30	.10	.15	.30	.13	T.											T.			.32								1.30
Bonaparte	Des Moines			.24	.13		.20	.25			T.												.20									1.02
Boone‖	do				T.	T.	.22	.10	.04					T.										T.								.36
Britt	Iowa			T.		T.	.01	.03	T.					T.			T.		.01										.01		T.	.06
Buckingham	Cedar					.03	.02	.10						T.										.34					.02			.51
Burlington‖	Mississippi				.33	.15	.01	.27	.41			T.					T.	.03			T.			.50					T.		T.	1.70
Carroll‖	Raccoon				.10	.10	.50	.10	.10																							0.90
Cedar Rapids‖	Cedar						.03	.24	.30						T.		.15	T.				T.		.40	T.				T.	T.	T.	1.12
Charles City	do		T.	T.		.05		.09						T.					.02				.06	.06			T.	T.	T.	T.		0.28
Clear Lake	do					.10	.10												.05										.03			0.28
Clinton	Mississippi			T.		.11	.19	.31	.01		T.			T.			.01		T.		T.		T.	.40			T.	.01	.01		.05	1.10
Columbus Junction	Iowa				.07	.17	.10	.20	.03					T.			.02				T.			.40					.03		T.	1.02
Davenport	Mississippi			T.	.03	.10	.18	.24	T.	T.				T.			T.				T.		.20	.23			.02	.02	T.	.02	T.	1.04
Decorah	do	T.			.30		.48	.09										.02						.31			.02			T.		1.22
Delaware	do					.04	.04	.17																.41							T.	0.66
Des Moines	Des Moines				.05	.12	.16	.31				T.		T.							.05		.05	.36						T.	T.	1.10
Dubuque	Mississippi		T.	.01		.09	.11	.42		.01		T.		T.			T.		T.	T.			.07	.33				.04		T.	.03	T.	1.11
Earlham	Raccoon				.40	.20	.10	1.00													.05			.26							T.	2.01
Elkader	Mississippi					.15	.05	.27									T.							.30				T.	T.	T.	T.	0.77
Elma	Wapsipinicon			T.		.05		.10						T.		.02			.03					.02	.01		T.		T.	T.		0.23
Estherville‖	Des Moines						.10	.05											.10										.05			0.30
Fairfield	Skunk				.16	.09	.06	.15	.10														.03	.31					.02		T.	T.	0.92
Fayette	Mississippi		T.			.20		.52						T.										.24						.02	.01	.01	1.00
Forest City‖	Cedar				T.	.05		.20											.10								T.			T.		0.35
Fort Dodge‖	Des Moines					T.	.30	.20	T.						T.				T.						.10			T.			T.	0.60
Fort Madison	Mississippi				.30	T.	.20	.30			T.						T.				T.		.50							T.		1.30
Gilman	Iowa				T.	.01		.50	.10														.40				T.			T.		1.01
Grand Meadow	Mississippi			T.		.20		.30				T.		.02					T.					.14			.05	.05				0.76
Grinnell	Iowa					.02	.20	.55						T.			.20				T.			1.08						T.		2.05
Grundy Center	Cedar					.20	.10	.80						T.										.10					.10			1.30
Guthrie Center	Raccoon				.12	.25	.03	.24	.02								T.		T.		T.			.08								0.74
Hampton	Cedar					.23	.26	.10						.01									.27					.03				0.90
Humboldt	Des Moines					.25		.18						.04					.05													0.52
Independence	Wapsipini'n					.12	.10	.50	.05			T.		.01									.30	.30						T.	T.	1.38
Indianola	Des Moines				.25	.08	.66	.02				T.		T.							.03			.41						T.		T.	1.45
Iowa City ‖	Iowa				T.		.12	.24	.30									T.				T.		.50				.03				1.19
Iowa Falls ‖	do					T.	.30	.05	.35						.10			T.	T.					.25			.02	.07			T.	1.14
Jefferson	Raccoon				.01	.15		.30	.05												T.			.03								0.54
Keokuk	Mississippi				.07	.15	.11	.15	T.		.04			T.			T.			.02		.30	.20							T.	T.	1.04
Keosauqua ‖	Des Moines				.20	.10	.10	.20	.15			T.	T.									T.		.25	T.			T.			T.	1.00
Knoxville	do				.30	T.	.10	.20			T.						T.						T.	.30			T.					0.90
Lacona	do				.30	.10	.20	.10				T.									.05			.62				.05			T.	1.42
Lansing ‖	Mississippi			T.			.18	.05	.40				.01		.07				.02					.12			T.	.08	.09		.01	1.03
Le Claire ‖	do			.01	.01		.10	.20	.15						.01							.01		.37	.03			.02	T.		.04	0.95
Marshalltown ‖	Iowa					.08	.15	.19	.28						.02	T.	T.		T.		T.	.02		.36				.02			.01	1.13
Mason City	Cedar					.05		.16																								0.21
Monroe	Skunk	T.			T.	.06	.16	.16				T.		T.			T.				T.		T.	.65			T.			T.	T.	1.03
Mount Pleasant	do				.20	.10	.25	.21	.03		T.										T.		T.	.42				T.			T.	1.21
Muscatine ‖	Mississippi				.05		.12	.13	.17													T.		.07				.04			T.	0.58
New Hampton	Wapsipini'n					.31		.45			.06						T.							T.							T.	T.	0.82
Nora Springs	Cedar			T.		.33		.23						T.				.01									T.			T.	T.	0.57
Northwood	do	T.	T.			.10	.05	.20											.01					T.			T.	T.			T.	.01	0.37
Olin	Wapsipini'n	T.				T.	.40	.30																.55					T.	T.		T.	1.25
Osage	Cedar					.30		.20						T.														T.					0.50
Oskaloosa	Des Moines	T.			.14	T.	.10	.17						T.							T.		T.	.46				.02				T.	0.89
Ottumwa	do																																
Pella	do				.07	T.	.24	.29	.05			T.		T.							T.			.32					T.			T.	0.97
Perry	Raccoon				.10	.40		.80						T.			T.	T.			T.			.12								T.	1.42
Pocahontas	do					.07	.05	.14									.03												T.		T.		0.29
Rockwell City	do					.20											T.						.50										0.70
Sac City	do					.33	.10	.12	T.								T.											T.			T.	T.	0.55
St. Charles	Des Moines				.19	T.	T.	.05	.55								T.				.03			.41								T.	1.23
Sigourney	Skunk				.12	.03	.10	.10	.05			T.		T.			T.				T.			.36					.03				0.79
Stockport	do				.30	.08	.12	.10			.01	T.					T.				T.		.01	.30					.01				0.93
Storm Lake	Raccoon					.16		.18						T.					.02												T.	T.	0.36
Tipton	Cedar					.32	.28	.19	.02					T.							T.		.02	.46								.02	1.31
Toledo	Iowa						.05	.30	.50															.45									1.30
Wapello	do				.02	T.	.02	.02																.41									0.47
Washington	Skunk				.11	.10		.33	.04												T.		.48				.01					1.07
Waterloo ‖	Cedar						.14	.06	.15						T.	.01								.20					.01			T.	0.57
Waukee	Raccoon				.10	.04	.11	.40				T.		T.							.04		T.	.22							T.	T.	0.91
Waverly	Cedar					.10	.50												.10								T.					T.	0.70
Webster City	Des Moines	T.				.20		.30						T.										.05									0.55
West Bend	do					.07		.05						.05														T.			T.		0.17
Whitten	Iowa																																
Winterset	Des Moines				.20	.05	.15	.80				T.					T.		T.		T.			.30								T.	1.50
Missouri.																																	
Gorin	Mississippi				.13	.09	.07	.20			.03												.15										0.67
Hannibal	do				T.	.04	.30	.15	T.		.22	T.					.24	T.			.39		.26	.05				.01		T.		1.66
Louisiana	do					.04	.10	.15			.80		T.				.38				.74		.10	.76					.10		T.	3.17
Macon	do					.19	.04	.22	T.		.10						.56			.05			.12	.23								1.51
Mexico ‖	do					.02	.01	.20	.19			.42	.05			.60	.05	.31			.80	.02		.67	T.			.06				3.40
Palmyra	do			T.		.50						.43						.17			(?)		(?)	(?)								
Steffenville	do				.05	.07		.30									.20				.05		.15	.35							T.	1.17
Sublett	do				.10		.40	.05	.15														T.									0.70
Vandalia	do				T.			.53			.15	.27					.25				1.50											2.70
Warrenton ‖	do					.01	.03	.41	.12		.08	.50	.09			.05	.03	.54			.95	.06		.77				.06				3.70
Indiana.																																	
Collegeville	Iroquois				T.	.30	.73		.20		.54	.10				.27	.14				.36			.17				.15			T.	2.96
Knox	Kankakee			.03	T.	.04	.95	.41	.08		.06	.16	.15			.01	.01	.10	.57		1.25	T.		.47			T.	.15	T.		.13	4.57
Laporte	do			.05		.05	.46	.55	.11		T.	.14	T.					.40			.80	.20		.17			.05	.10	.05		.08	3.21
Plymouth	do			.09	T.	.02	.65	.23	.04	T.	.03	.47	.09			.05	.21	.08	.19		.48			.41			T.	.19	T.		.04	3.27
South Bend	do			.18		.02	.45	.50	.01		.06	.08	.08			.02	.10	.10	.13		1.06			.33			.01	.07	.03		.08	3.31

TABLE 2.—*Daily precipitation for January, 1913. District No. 5*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Illinois.																																	
Aledo	Mississippi				.10	.06	.13	.30				.02					.01				T.			.45					.01			.01	1.09
Alexander	Illinois			T.	.01	.01	.08	.44	.01		.17	.18	T.			.06	.22	.09	.19		1.16		T.	.53					.03			T.	3.18
Antioch	do						.08	1.00													T.			.38				.10		.25			1.81
Astoria	do				.05	T.	.10	.35			.22	T.		T.		.05	.20	.13			.30		T.	.80					.01		T.	T.	2.21
Aurora	do																																
Beardstown ‖	do																																
Bement	Mississippi				.04		.75			.12		.40	.04			.15	.04	.70	.51		1.35			.96					.08			.06	5.20
Bloomington	Illinois			T.	.15	.03	.18	.27			.33	T.					.34	T.	.41		.88		T.	.77					.02		T.	T.	3.38
Cairo	Mississippi		.18			.03	2.35	.91	T.		2.04	2.63				T.	T.	.76		T.	.98		.33	.72					T.		.72		11.65
Carbondale	do		.15			.07	1.43	1.40			1.12	1.62				.11	.10	.05	.08		1.07		.13	1.14					.05		T.	.18	7.70
Carlinville	Illinois					.05	.20	.20	T.		.82	.21				.25	.26	T.	.10		1.00			.77							T.	T.	3.86
Carlyle	Mississippi					.07	1.75	.30			.90	.45				.30	.10	.15			1.25		.03	.75					.09			.07	6.21
Chester ‖	do			.08		.01	1.12	.90	1.12		.26	2.10	.24			.16	.34	.54			.62	1.20		.94	.02				.02	.01		.10	9.78
Clinton	Illinois			T.	.07	.01	.35	.28	T.		.10	.23	.02			.11	.17	.20	.32		1.72			.82					T.		T.	T.	4.40
Coatsburg	Mississippi				.11	.06	.02	.29			.17						.20				.12		.10	.56					.02			T.	1.65
Cobden	do		.13			.04	1.85	1.45			1.00	1.48				.08	.06	.40	.03		.08			.61						T.		.32	8.13
Dakota	do			T.		.17	.16	.40	.05	T.	T.			T.					T.		T.			.46				T.	.13	.04		.04	1.45
Decatur	Illinois				.04	.20	.30	.27	T.		.20	.47				.20	.83	.09	.17		1.25		.10	.82					.10		.10	.05	5.19
Dixon ‖	Mississippi			T.			.17	.20	.17									T.						.40	T.					T.		T.	0.94
Duquoin	do		.11			.10	.55	.22			2.29	.15				.33	.63	.01		T.	1.32		.45	.82					.10			.03	7.11
Dwight	Illinois			T.	.16	.04	.12	.57	.02		.07	.04	T.			.04	T.	.22	.17		.52			.56					.06	T.		T.	2.59
East St. Louis ‖	Mississippi						.62	.47	.22		.05	.85	.05			.07		.27			.96	.40		.87					.04			.07	4.94
Edwardsville	do					.08	.80	.20	.08		.70	.37				T.	.26	.29			1.30		.22	.60							T.		4.90
Elgin	Illinois			T.		T.	.02	.55			T.	.05					.15		T.		.02			.39			T.	T.	.20	.15		T.	1.53
Ewing	Mississippi		.12			.08	.58	1.08			.62	1.56				.28	.30	.58		T.	1.23		.09	1.48					.06			.11	8.17
Fairview ‡	Illinois																																1.57
Galva	do				.09	.18	.13	.22	T.		T.	.02					.01				.03		T.	.60	T.				.01			.02	1.31
Grafton ‖	Mississippi					.06	.06	.30	.04		.04	1.30	.05			.08	.04	.84			1.94	.06		.92	.04				.18			.04	5.99
Greenville	do		T.			.45	.50	.48	T.		.45	.45	T.			.08	.17	.16			1.37		T.	.85					T.		T.	.05	5.01
Griggsville	Illinois				T.	T.	T.	.45			.29	T.	T.			T.	.31	T.			.69	T.	T.	.52					T.			T.	2.26
Havana	do				.08		.15	.25			T.				.02	.14		.22			.17			.14					.04			T.	1.21
Henry	do			T.	.15	T.	.16	.29	.09		.06						T.	.05			.19			.65					.05	T.		T.	1.69
Hillsboro	Mississippi					.13	.75	.87	T.		.42	.46	.05			.14	.26	.66	T.		2.23		T.	.87					T.		T.	T.	6.84
Joliet	Illinois		T.	T.	T.	.08	.40	.25			T.					T.	.11		.03	T.	.31		.37					.02	T.	.02	T.	T.	1.59
Kishwaukee	Mississippi			T.		.08	.05	.08	.03	T.		T.					.04				T.			.32				.03	.02	.02		T.	0.67
La Grange	Illinois					.16	.28				T.					T.	.03		.05					.45			T.	.03	.10				1.10
La Harpe	do			.20		.11	T.	.28			T.			T.			T.			T.		T.	.55						T.		T.	1.14
Lanark	Mississippi			.06		.10	.08	.14													T.			.45				T.	.05	.02		.01	0.91
La Salle	Illinois				.02	.09	.15	.09	T.	T.	.04	T.				.02	T.				.09		.38	.39					.01	T.	T.	.01	1.29
Lincoln	do				.05	.02	.05	.46	T.		.15	.19	T.			.05	.11	.13	.35		1.28			.77					.02			T.	3.63
Macomb	do				.13	T.	T.	.23			.07			T.			.02	.04			T.			.62					T.				1.11
Manteno	do			T.	.04	.03	.07	.66	.05		.06	.02	.03			.04		.27	.03		.67			.57					.04	.05		T.	2.63
Martinton	do			T.	.05	.02	.52	.28	T.		.11	.05	T.			.10	T.	T.	.58		1.06			.53					.08			T.	3.38
Mascoutah	Mississippi		.01			.17	1.25	.55			.50	.71					.16				1.65								.05			.05	5.10
Minonk	Illinois			T.	.12	.03	.12	.20	.02		.12					.05	.19		.12		.36			.59					.08			T.	2.00
Monmouth	Mississippi				*	*	.60	.31	T.		T.						T.				T.			.70					T.			.05	1.66
Morris	Illinois				T.	.05		.10	.32		.03	.03				.02	T.		.01		.24			.68					T.	.04			1.52
Morrison	Mississippi			.03		.04	.12	.30	.05			.02									T.			.39				T.	.01	.01		.03	1.00
Morrisonville	Illinois					.03	.55	.55	T.	T.	.25	.30	.05	T.	T.	.17	.40	.13	.09		1.38		T.	.85					.03		T.	.06	4.84
Mt. Vernon ‖	Mississippi			.10		T.	.65			.70	.50	1.70	.30			.14	.40	1.00			.40	1.40		1.16					.05			.26	8.76
Nashville	do	T.				.12	.80	1.10	T.	T.	.80	1.15				.40	.28	.11			1.35		.02	1.04					.10		T.	.30	7.57
Oregon	do			.01		.01	.14	.28									T.		T.		T.			.50				T.	T.		T.	.04	0.98
Ottawa	Illinois				.05	.09		.35			.10					.04	.04				.36			.71					.06				1.80
Pana	Mississippi																																
Paw Paw	Illinois			T.		.02	.28	.32	T.			T.					.04		T.		T.			.60				T.	T.	.02		T.	1.28
Peoria	do				.24	.10	.15	.18	.01		.15			T.		.09	.20	.13		T.	.29		.27	.35					.02		T.	T.	2.18
Pontiac	do			T.	.50	T.	.10	.20	T.		.07	.09	T.			.09	.01	.19	.32		.69			.57					.20	T.		T.	3.03
Quincy ‖	Mississippi				.03		.08	.17	.20			.25					.09			.10	.02			.72					T.				1.66
Riley	do				T.	.02	.15	.25	.01								.03		T.		.05			.35				.01		.15		T.	1.02
Roberts	Illinois			T.	.16	.08	.04	.08	T.		.11	.08	.03			T.	.03	.12	.37		1.18			.47					.05		T.	T.	2.80
Rockford	Mississippi		T.	T.		.16	.18	.41	.04			T.					.02		T.		T.			.30				.02	.03	.13		.01	1.30
Rushville	Illinois				.50	T.	T.	T.	T.		.04	T.					.21		.08		T.			.06					.05			T.	0.94
St. Charles	do			T.		T.	.05	.42		T.	T.	.02					T.		.10		.06			.48				T.	.05	.07		T.	1.25
St. Peter	Mississippi		T.			.12	1.27	.87	T.		.45	.91				.25	.15	.13			1.37		.05	.72					.07		T.	.10	6.46
Sparta	do	.05				.10	.84	2.20	.08	.10	.74	1.00	.08	.41	.25	1.00	.36				2.10		.05	1.07					.08		.18		0.09
Springfield	Illinois				.03	.09	.32	.12	T.	T.	.35	.11				.10	.43	.29			1.10		.54	.21					.04		.01	T.	3.55
Streator ‖	do			.01	.06	.10	.10	.21	.12			.07				.03		.09	.06		.19	.07		.63					.02	T.			1.76
Sullivan	Mississippi				.05	.10	1.12	.68			.30	.20				.30	.67	.13			1.50			.97					.10			.10	6.22
Sycamore	do					.05	.20	.10			T.					T.	T.		T.		T.			T.				T.	.04	T.	T.		0.38
Tiskilwa	Illinois			T.	.13	T.	.10	.40	.03								T.				T.			.74					T.	T.		T.	1.46
Walnut	Mississippi			.01	T.	.14	.09	.35	.02			.02		T.					T.		.01			.65					T.	T.		.01	1.30
Warsaw ‖	do					.10		.45															.42								T.	0.97
Waterloo	do		T.			.13	.71	.61	T.		.57	.43				.07	.04	.07			1.98		.06	1.04					.09		T.	.09	5.89
White Hall	Illinois				T.	.04	.04	.40	T.		.35	.41	.03			.07	.80	.33			1.22		.02	.87					T.			.02	4.60
Windsor	Mississippi																																
Winnebago	do			T.		.06	.20	.40													T.			.38				.08	T.			T.	1.12
Yorkville	Illinois			T.		T.	.02	.10			.01	.01					T.	.01	T.		.10			.05				T.	.01	.06		T.	0.37

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 5, Upper Mississippi Valley.*

Date.	North Dakota.										Minnesota.															
	Bottineau.§§		Devils Lake.		Lisbon.§§		Minot.§§		Pembina.§§		Collegeville.		Crookston.§§		Grand Meadow.		Montevideo.§§		Moorhead.		New Ulm.§§		Pine River Dam.		St. Paul.		Winnibigoshish.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	20	1	32	− 8	50	20	.....	.....	36	12	42	31	29	18	40	27	45	26	32	16	45	20	36	16	42	22	38	15
2....	19	− 6	17	− 2	36	10	.....	.....	30	10	37	9	9	3	27	12	33	12	16	0	20	17	26	18	29	10	15	7
3....	16	− 6	18	0	28	− 3	.....	.....	10	5	15	6	5	− 3	22	7	32	18	12	0	21	8	20	− 9	14	5	10	− 8
4....	− 6	−20	5	−16	19	− 4	.....	.....	5	−10	21	− 2	6	−13	18	3	23	23	11	−11	10	5	9	−18	16	− 5	10	−14
5....	−20	−31	−15	−25	10	−18	.....	.....	−10	−18	13	−11	−10	−19	13	− 4	12	− 9	−10	−20	3	− 4	7	−20	0	− 7	− 3	−18
6....	−13	−39	− 9	−26	− 3	−25	.....	.....	− 8	−22	9	−21	−12	−25	2	− 6	3	−18	−14	−27	2	−10	− 5	−27	0	− 9	− 5	−28
7....	0	−38	7	−16	7	−24	.....	.....	− 5	−18	7	−15	− 5	−26	7	− 3	7	−11	− 3	−27	10	−10	− 2	−34	9	− 3	− 8	−35
8....	20	−16	22	− 5	25	−20	.....	.....	−10	−15	14	−10	14	−23	11	−12	23	− 9	17	−15	15	− 8	10	−36	14	− 7	12	−29
9....	4	−10	18	− 7	25	−12	.....	.....	− 5	−22	28	8	19	−10	21	2	32	7	22	1	29	− 7	23	5	29	9	20	6
10....	−10	−23	− 7	−17	15	−10	.....	.....	−10	−20	26	5	5	−10	23	3	18	4	2	−10	18	5	22	− 3	22	10	15	4
11....	−23	−29	−17	−30	12	−18	.....	.....	−15	−18	15	− 8	5	−21	22	− 4	− 3	−10	−10	−26	2	− 7	8	−18	17	−10	4	−18
12....	−14	−41	−10	−32	10	−33	.....	.....	−18	−28	3	−24	3	−38	3	−16	5	−20	− 7	−37	5	−16	− 6	−43	4	−18	− 8	−34
13....	11	−36	4	−24	21	−25	.....	.....	− 5	−38	9	− 5	8	−33	10	− 3	22	− 5	4	−20	12	−14	1	−17	8	− 1	5	−18
14....	14	−31	17	4	33	−20	.....	.....	−10	−28	24	−12	19	−22	20	− 8	33	5	24	4	28	− 3	19	−12	28	1	15	− 8
15....	16	− 7	17	− 4	30	− 3	.....	.....	−15	−30	32	13	20	− 1	35	20	35	5	18	0	38	11	28	3	35	25	18	4
16....	3	− 5	9	− 8	40	0	.....	.....	−12	−28	36	17	29	− 3	41	23	45	− 2	36	2	40	18	34	2	45	28	35	6
17....	− 3	−14	6	−14	15	−18	.....	.....	−10	−26	38	− 3	4	− 9	43	12	32	2	2	−12	15	5	31	− 7	39	5	6	− 8
18....	5	−19	− 3	−18	25	−14	.....	.....	−18	−30	10	−13	8	−18	16	0	20	−12	13	−18	12	− 7	1	−22	16	− 4	6	−17
19....	−13	−18	5	−16	13	−14	.....	.....	−10	−32	19	0	0	−16	32	12	10	10	13	−14	12	− 7	3	− 7	32	1	8	− 5
20....	− 4	−36	− 7	−28	15	−23	.....	.....	− 8	−22	3	−13	3	−21	14	− 2	23	−12	− 6	−22	20	− 9	− 4	−23	1	− 7	0	−22
21....	11	−36	0	−16	23	−20	.....	.....	−12	−20	28	−13	6	−22	32	− 4	30	10	9	−13	38	− 6	23	−29	34	− 4	22	−28
22....	21	−20	22	−10	26	−12	.....	.....	− 5	−23	34	3	25	−18	39	13	42	15	29	−12	40	12	31	−21	38	13	28	−20
23....	2	−15	3	−14	23	− 6	.....	.....	− 8	−20	34	− 3	5	−12	35	10	20	− 3	1	− 9	23	7	27	− 7	32	3	0	− 8
24....	5	−15	5	− 5	33	− 8	.....	.....	− 5	−22	29	− 3	12	−10	37	3	34	10	11	0	41	2	17	− 8	33	3	10	−10
25....	22	−10	31	1	43	− 2	.....	.....	0	−12	37	12	22	− 4	43	22	51	12	34	3	49	21	28	− 5	40	21	26	− 3
26....	20	− 5	11	− 7	24	− 3	.....	.....	− 8	− 8	38	7	10	−10	39	17	28	4	16	− 7	19	13	27	2	41	8	22	3
27....	16	− 5	8	− 2	28	− 6	.....	.....	30	−10	16	5	8	− 8	27	9	18	15	11	−11	28	11	12	− 1	17	4	15	− 3
28....	32	6	36	6	38	− 4	.....	.....	22	− 5	18	0	32	− 7	22	− 5	40	− 5	34	−12	34	− 2	12	−20	22	0	12	− 9
29....	28	16	33	20	36	− 3	.....	.....	32	−12	34	16	25	1	44	17	42	27	36	21	48	− 1	32	9	38	20	28	10
30....	10	−15	20	−17	24	−20	.....	.....	15	− 5	31	15	15	13	33	22	24	18	21	−11	23	13	21	7	33	11	20	6
31....	−15	−25	−10	−26	20	−20	.....	.....	− 5	−30	−20	−17	−10	−20	23	−10	13	−16	− 7	−21	20	−12	10	−16	11	−10	11	6
Mns..	5.6	−17.7	8.5	−11.2	24.0	−11.2	.....	.....	−1.4	−17.6	23.2	−0.8	10.1	−12.5	25.6	5.1	25.5	2.9	11.8	−9.9	23.2	1.5	16.2	−11.0	23.8	3.7	12.5	−8.9

Date.	Wisconsin.														Iowa.											
	Eau Claire.		Grantsburg.		Hancock.		La Crosse.		Madison.		Prentice.		Wausau.		Algona.		Cedar Rapids.		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	41	14	45	12	40	13	44	26	43	25	36	5	38	12	41	26	50	26	48	25	50	31	48	35	48	28	53	32
2....	33	16	38	17	38	22	37	18	37	19	36	22	36	24	35	17	28	28	32	19	40	25	38	21	40	21	41	22
3....	17	2	40	− 3	21	10	22	10	24	13	22	4	24	12	30	13	32	16	27	9	34	16	37	17	30	16	40	19
4....	14	− 4	28	10	14	− 1	18	6	19	8	11	0	16	4	28	11	25	15	25	10	26	17	27	19	24	14	28	20
5....	5	− 6	5	−13	10	0	13	0	14	5	14	−11	11	− 4	24	− 2	19	17	14	1	21	13	21	6	17	7	21	15
6....	7	− 4	1	−15	16	0	11	− 1	17	7	14	− 3	14	1	1	− 8	15	7	4	− 3	17	11	7	2	14	7	16	9
7....	13	− 2	7	−11	15	9	15	4	17	12	10	− 1	14	6	6	− 4	19	6	11	0	21	16	14	4	19	14	22	16
8....	15	−10	13	−22	15	− 9	15	− 5	19	3	14	−20	18	− 7	11	−12	14	− 1	10	−14	19	5	15	− 6	19	5	22	7
9....	27	5	28	9	20	3	26	6	22	3	22	2	21	4	23	5	23	− 3	21	− 1	26	10	23	6	24	7	31	11
10....	21	4	17	3	21	11	24	7	31	19	23	− 4	19	8	25	− 1	34	9	25	− 1	35	19	35	16	35	20	40	25
11....	20	− 4	19	−12	23	3	24	− 5	32	− 4	23	4	21	9	20	5	22	19	22	− 7	35	3	30	− 1	35	− 2	35	5
12....	− 3	−18	7	−32	3	−15	2	−10	3	− 9	4	−24	14	−15	4	−14	5	− 7	3	−14	7	− 7	3	− 9	8	− 7	13	− 5
13....	11	− 6	12	− 7	12	− 9	13	− 3	15	0	10	−18	9	− 7	9	− 4	17	−10	11	− 8	24	6	14	− 2	18	1	30	7
14....	25	− 7	23	− 4	21	−11	26	− 5	31	1	21	−12	20	− 5	26	− 6	39	− 4	28	− 8	37	3	38	− 4	35	− 3	42	3
15....	36	19	30	9	35	15	40	26	40	31	33	15	37	17	39	24	43	− 1	42	22	43	37	45	33	43	35	55	39
16....	39	28	38	5	38	20	51	36	49	33	37	30	36	32	41	23	50	30	43	25	55	42	52	30	53	34	60	47
17....	39	11	40	3	44	21	49	19	49	22	37	8	41	16	41	9	30	29	41	16	52	30	50	21	52	25	56	32
18....	13	2	16	− 8	37	9	21	8	24	14	13	0	19	6	20	− 2	33	22	19	0	30	22	27	13	26	19	33	24
19....	36	11	32	0	35	5	40	15	41	22	32	16	36	11	29	8	44	16	34	8	46	26	41	16	45	23	50	25
20....	18	− 2	10	−15	26	− 7	15	0	23	4	32	− 6	35	3	10	− 5	14	14	8	0	26	6	16	4	23	5	25	9
21....	31	− 6	33	−12	37	10	32	0	28	1	22	−14	24	− 8	35	− 2	35	3	33	− 1	34	5	36	3	34	4	35	7
22....	37	9	37	− 4	36	26	40	17	38	17	32	− 2	34	8	42	18	41	5	41	17	41	22	45	21	41	18	40	24
23....	35	10	34	− 2	35	25	35	11	36	11	32	20	35	28	40	10	35	20	32	0	40	20	36	20	37	13	42	26
24....	34	3	29	4	33	2	34	5	29	2	28	− 2	28	2	41	4	37	9	38	− 4	39	13	41	15	36	6	42	16
25....	40	19	36	− 9	38	16	47	21	36	20	32	9	35	5	51	26	42	9	47	23	48	30	51	32	41	25	51	30
26....	35	17	31	−10	37	23	40	16	42	16	32	18	34	20	43	16	43	31	38	13	48	21	44	23	45	18	52	24
27....	19	7	22	1	23	6	20	8	20	8	23	− 5	21	1	40	13	43	15	36	13	38	16	45	19	36	15	44	17
28....	18	− 7	24	11	22	0	21	− 3	14	− 3	20	−18	19	5	25	2	29	10	23	4	27	16	35	16	22	6	36	20
29....	39	8	19	14	35	12	43	18	36	6	30	10	33	12	48	32	46	13	48	22	47	20	55	30	43	18	53	24
30....	36	24	30	8	34	22	36	18	35	16	30	22	33	23	37	20	40	29	33	15	47	22	40	26	37	20	51	26
31....	25	− 4	22	4	28	0	18	− 5	22	− 7	26	0	30	4	23	−11	14	13	15	−10	22	− 4	26	− 3	20	− 5	26	1
Mns..	25.0	4.2	24.7	−2.9	27.2	7.5	28.1	8.3	28.6	10.2	24.2	1.5	26.0	7.3	28.6	6.5	31.0	12.4	27.5	5.5	34.7	16.5	33.4	13.6	32.3	13.1	38.2	18.6

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 5*—Continued.

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois.															
	Cairo.		Greenville.		La Salle.		Monmouth.		Mount Vernon.§§		Peoria.		Springfield.		Winnebago.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	55	31	41	21	55	33	55	27	47	29	50	26	54	22	50	28	51	29	43	24
2	40	24	38	29	52	28	47	27	39	25	44	25	52	32	41	26	39	25	39	21
3	42	22	32	22	41	25	38	22	37	20	37	16	36	20	36	20	38	22	28	15
4	34	20	28	16	58	32	36	24	27	18	29	18	39	22	24	18	30	18	24	12
5	24	19	24	12	64	32	33	20	27	17	22	14	42	25	27	17	26	16	19	11
6	20	11	32	24	62	30	34	23	23	15	19	10	33	28	25	15	27	18	15	10
7	23	17	30	22	34	28	32	27	29	18	22	14	32	27	29	20	31	23	20	15
8	26	11	29	18	28	20	31	19	19	8	20	9	27	19	22	6	24	17	18	5
9	29	17	27	5	35	25	31	22	26	6	33	4	36	18	26	6	28	22	24	0
10	38	22	32	16	46	28	33	23	35	22	35	19	43	24	34	22	34	24	32	19
11	38	6	35	28	53	29	37	29	35	9	35	10	41	30	35	8	36	12	33	10
12	16	− 1	28	10	29	17	30	7	10	− 3	10	− 7	24	11	15	− 3	15	3	10	−10
13	33	11	31	4	36	25	34	16	28	9	28	3	35	13	30	11	33	13	22	− 5
14	41	9	32	11	43	26	39	11	34	9	33	1	40	18	36	15	37	16	29	− 1
15	55	38	38	25	55	37	45	32	44	34	42	30	48	18	42	32	45	33	40	28
16	59	49	40	32	60	51	54	44	56	42	53	37	57	38	53	41	55	42	49	35
17	58	32	37	33	61	54	56	54	57	34	52	33	51	47	54	34	56	43	52	31
18	35	26	41	32	56	44	55	31	34	27	35	24	48	37	34	27	43	30	32	21
19	53	29	51	25	59	42	59	30	45	27	45	25	50	30	47	28	55	30	42	22
20	30	11	40	25	62	28	59	22	36	10	42	14	50	40	38	11	48	14	37	12
21	31	10	27	5	35	22	32	13	28	6	31	5	34	15	28	8	30	11	29	3
22	36	22	35	9	38	26	37	21	37	20	38	18	44	10	37	21	36	23	39	16
23	41	29	38	30	56	38	45	31	39	28	41	31	51	23	38	27	41	31	37	30
24	42	20	38	22	44	38	44	29	39	21	39	14	45	35	38	19	41	25	35	12
25	52	29	38	22	52	32	53	27	45	29	50	27	52	25	47	28	49	28	41	24
26	54	26	46	30	53	41	57	34	49	25	52	31	50	25	50	26	52	28	45	32
27	42	20	32	20	45	28	47	23	32	18	40	16	36	26	34	18	35	21	33	13
28	39	22	24	18	42	32	37	28	29	20	37	20	57	28	32	18	36	23	21	5
29	56	22	33	8	51	30	49	23	43	20	50	17	57	28	48	18	48	21	40	17
30	53	29	45	21	56	43	57	40	49	27	52	32	36	27	50	28	51	30	43	24
31	29	2	43	8	44	23	52	15	27	− 2	34	0	38	26	28	0	30	5	32	0
Means	39.5	20.5	35.3	19.5	48.5	31.8	43.5	25.6	35.5	19.0	37.1	17.3	43.0	25.4	36.4	19.1	38.7	22.5	32.4	14.5

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 6, MISSOURI VALLEY.

MONTROSE W. HAYES, District Editor.

GENERAL SUMMARY.

As a rule, the weather was favorable throughout the district, and the month was marked by the absence of severe storms. The first half of the month was the colder, and over most of the drainage area, except the extreme eastern portion, some abnormally low temperatures were recorded. The first general cold wave appeared in Montana on the 4th, and low temperatures prevailed in the western half of the district until about the 20th and over most of the eastern half until about the 14th. The precipitation was unevenly distributed geographically and, with the exception of rain over the extreme eastern portion of the drainage area, was mostly in the form of snow. The sunshine was above the normal except in the extreme northwestern section; Denver, Colo., with 79 per cent of the total possible, had the greatest amount, and Havre, Mont., with 19 per cent, had the least. The general weather conditions were especially favorable for transportation interests, and with a few exceptions in some of the mountain regions there was less delay to trains on account of snow than in many years. The weather was also favorable for winter pasturage, and in most of the grazing sections stock fed on the range throughout the month; the only unfavorable feature was the lack of moisture.

TEMPERATURE.

The mean temperature ranged from 10.5° below the normal at Steele, N. Dak., to slightly more than 6° above the normal in the Bighorn Valley in Wyoming. The region of the greatest deficiency was the northern half of Montana and that portion of North Dakota north of the Missouri River; the region of the greatest excess embraced eastern South Dakota, most of Nebraska, and the country bordering on the lower Missouri. The extreme range in temperature for the district was 128°; the highest reading being 74° at Crocker, Mo., and the lowest 54° below zero at Crazy Creek, Wyo., and Marstonmoor, N. Dak. The lowest temperatures, as a rule, occurred from the 4th to the 9th over the western half of the district, and from the 8th to the 13th over the eastern half. In the greater part of Wyoming, Montana, and North Dakota extremely low temperatures were recorded during the first 20 days; for most of the remainder of the month comparatively mild conditions prevailed. Zero temperatures were experienced over the entire district, except a small portion of Missouri. The highest temperatures were mostly recorded during the last week of the month; they were followed by a cold wave that set in on the 31st and covered the whole district.

PRECIPITATION.

The precipitation was unevenly distributed; it ranged from a trace at a number of stations in North and South Dakota, Nebraska, and Kansas to 7.25 inches at Houston, Mo. Over a great part of the drainage area the month was a dry one; this was especially true of Nebraska, the eastern part of Kansas, western and northern Missouri, northern Iowa, southeastern Wyoming, and all of South Dakota except the Black Hills district. In most of the Nebraska counties north of the Platte River and throughout the eastern portion of South Dakota the total for the month was less than 0.10 inch. There were no well-defined wet periods in Wyoming and Montana, there being scattered precipitation on every day of the month at some station within both States, and the amount was uniformly distributed. Over the Dakotas the periods were somewhat more pronounced, but they were not well defined. Throughout Colorado most of the fall for the month occurred on the 4th and 5th; in Nebraska the wettest period extended from the 4th to the 7th. In Iowa, Kansas, and Missouri a well-marked period of precipitation lasted from the 4th to the 7th, and in Missouri wet periods also prevailed on the 10th–11th, 16th, 20th–23d, and 28th. Over most of the district practically the entire precipitation for the month was in the form of snow, the exception being the extreme lower portion, where it was almost all rain; at a number of stations in Missouri there was no snow at all, and at several mere traces occurred. The precipitation was above the normal over most of Montana, Wyoming, North Dakota, and that portion of Missouri lying to the east of the ninety-fourth meridian and south of the Missouri River. The greatest excess was at Houston, Mo., and the greatest deficiency was at Avalon, Mo.

The following are special remarks, made by the section directors, on snowfall in the Black Hills and in that portion of the Rocky Mountains drained by the Missouri River:

South Dakota.—In the more elevated portions of the Black Hills district—that is, in Lawrence and in parts of Butte, Meade, and Pennington Counties—the snowfall in January ranged from 9 to 34.5 inches, the average for the entire area being about 20 inches. At the close of the month the average amount remaining on the ground was about 16 inches. Reports indicate that the snow in the timber and gulches is fairly well packed.

Montana.—The snowfall during January was above the normal in most mountain districts, but in many of the ranges east of the Continental Divide it was not sufficient to offset the deficiency in November and December. The deficiency is most marked in the main range and other mountains forming the watershed of the Jefferson River. In the Gallatin, Madison, and Tobacco Root ranges there was somewhat more than the usual depth of snow on the ground at the end of the month; there was about the usual depth on the Milk River watershed, and less than the normal over the watersheds of the Musselshell and Yellowstone rivers. Most of the small streams were above the normal winter stages, indicating a surplus of water below the frost line.

Wyoming.—On the eastern elevations of the Bighorn conditions improved during January and at the end of the month there was a normal amount of snow stored in the timber. Less promising prospects prevail over the headwaters of the streams tributary to the Platte River, for the snow was not packed and its depth was less than is usual on January 31. The quantity of snow in the Yellowstone Park increased considerably, and its condition was reported good.

Colorado.—On the South and North Platte drainage areas the January snowfall did not depart much from the normal, but there was less than the usual fall during the earlier part of the winter and the depth of

snow on the ground at the end of January was less than is usual. Much drifting resulted from the prevailing high winds, which carried snow from the open to the timber and gulches. Owing to low temperatures the customary amount of settling did not occur, and the water content of the snow as compared with the depth was relatively small at the end of the month. There was, however, some benefit from the intense cold, for the amount of water that reached the trunk streams was reduced and there was a flooding of areas adjacent to the small streams, resulting in large accumulations of ice.

RIVERS.

The stages of the rivers during the first half of the month were below the normal, but after the 15th they increased gradually and by the end of the month they were nearly normal. From Pierre, S. Dak., southward the most open condition ever experienced in the Missouri River prevailed. The river was temporarily blocked by ice at a number of places north of Glasgow, Mo., but the time was of short duration. There was considerable floating ice in the lower Missouri until the 20th, but very little after that date. The following special reports were received from stations on the Missouri River:

Pierre, S. Dak.—A narrow bridge of ice has formed over the Missouri River, over which teams pass occasionally; with this exception the channel is still open.

Yankton, S. Dak.—The river channel remained open practically the entire month; it was temporarily blocked on the 11th, 19th, and 31st. The ferry boat ran most of the month; this has never been practicable before in January.

Sioux City, Iowa.—The Missouri River is still open; this is extraordinary and is believed to be unprecedented for January. The channel has remained open all winter, except where it was temporarily frozen. Shore ice is 15 to 24 inches thick.

TABLE 1.—*Climatological data for January, 1913. District No. 6, Missouri Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Wyoming.																			
Arapahoe	Fremont		3																Edw. L. Seymour.
Barnum	Johnson	5,500	8																Thos. Freeguard.
Basin	Bighorn	3,862	14	23.9	+ 6.1	48	17	− 26	6	50	0.38	+ 0.10	0.38	6.0	1	28	2	1	nw.	O. J. Robertson.
Bennett	Carbon		3																	Chas. C. Young.
Big Creek Station	do	7,500	2	13.6		40m	14	− 36m	7	51m	0.72		0.64	9.0	2	4m	11n	3m	sw.	U. S. Forest Service.
Boyd	Weston	6,192		13.1		41	29	− 34	6	49	2.40		0.82	23.9	11	15	3	13	sw.	Kirk Baker.
Burns	Laramie	5,400	3	22.4		53	21†	− 28	5	41	0.35		0.15	3.9	3	9	20	2	sw.	E. W. Bastian.
Casper	Natrona	5,101	4																	M. C. Cook.
Centennial	Albany	8,074	10	17.4		40	14	− 31	6	36	1.10		0.20	11.5	11	10	11	10	w.	Louis A. Gregory.
Cheyenne	Laramie	6,088	42	24.4	− 1.2	54	14	− 26	6	35	0.55	+ 0.15	0.30	5.8	6	11	15	5	nw.	U. S. Weather Bureau.
Chugwater	Platte	5,282	12	26.6	− 1.4	55	14	− 30e	16	42e	0.36	− 0.40	0.18	4.0	2	12e	14e	2e	sw.	A. H. Woolever.
Clark	Park	4,320	8	23.4		51	28	− 15	6	58	0.76		0.31	8.5	7	9	10	12	w.	Chas. A. C. Snow.
Cody	do	5,000	6	22.7		52	28	− 17	6	48	0.05		0.02	0.9	3	12	7	12	w.	D. A. Tinkcom.
Crazy Creek	do	6,828	2	10.2		35	28	− 54	6	49	1.41		0.25	20.0	14	6	3	22	w.	Jas. Smith.
Dome Lake	Sheridan	8,821	5	12.4		40	28	− 33	6	40	0.95		0.20	19.0	10	6	9	16	sw.	Abe Mills.
Douglas	Converse	4,793	4	23.2		52	29	− 36	7	44	0.22		0.06	4.1	5	21	6	4	w.	Henry C. Miller.
Dubois	Fremont	6,909	6	16.5		42	28	− 32	6	31	0.45		0.10	4.5	6	7	19	5	w.	Dr. F. H. Welty.
Eatons Ranch	Sheridan	4,600	8	21.2		57	28	− 19	5	53	0.91		0.27	10.9	8	17	10	4	nw.	F. A. Eaton.
Echeta	Campbell	4,200	4								1.60		0.45	15.5	5	6	15	10	n.	M. R. Hunter.
Elk Mountain	Carbon		8								0.92		0.25	18.2	7					Wm. Richardson.
Encampment	do	7,322	4	19.8		42b	28	− 30b	7	38b	0.15		0.08	1.9	5	4b	20b	5b	sw.	U. S. Forest Service.
Ervay	Natrona	6,400	4	17.6		39	25†	− 31	6	38	0.33		0.17	7.0	5	14	12	5	sw.	Frank Jameson.
Fort Laramie	Goshen	4,270	35	25.7	+ 0.7	63	16	− 40	6	45	0.33	− 0.12	0.26	6.0	2	19	10	2	w.	John Hunton.
Foxpark	Albany	9,015	3	7.2		34	14	− 52	6	52	0.70		0.20	10.2	5	9	13	9	sw.	U. S. Forest Service.
Germania	Bighorn	4,312	2	17.9		53	25	− 27	6	46	0.30		0.15	4.5	5	10	13	8	nw.	J. W. Peper.
Gillette	Campbell	4,546	7																	S. D. Perry.
Horse Creek	Fremont		1																	U. S. Forest Service.
Hunters Station	Johnson	8,000	7	16.4		42	29	− 27	6	46	1.24		0.38	18.0	9	20	3	8	w.	Do.
Hyattville	Bighorn	4,632	14	22.4	− 1.4	53	25†	− 17	6	43	0.60		0.60	6.0	1	9	15	7	w.	Wm. Booth.
Jireh	Niobrara	5,050	3								0.95		0.50	9.5	7	13	15	3	sw.	P. L. Ford.
Kinnear	Fremont			22.4		60	24	− 20	6†	44	0.05		0.05	0.7	1	15	3	3	w.	John C. Hayes.
Kirtley	Niobrara		9	22.4		53	14†	− 26	6	39	0.27		0.27	3.0	1	17	8	6	nw.	D. M. Zumbrunnen.
Kirwin	Park	9,187	4																	C. L. Tewksbury.
Knowles	Crook	4,500	4								1.16		0.80	15.7	8	17	11	3	nw.	Geo. A. Knowles.
Lagrange	Goshen	4,720	3	26.9		55	14	− 25	6	35	0.41		0.15	4.2	5	15	12	4	w.	Owen Shupp.
Lander	Fremont	5,372	21	20.6	+ 3.2	57	28	− 26	7	41	0.49	+ 0.06	0.42	2.2	4	11	12	8	sw.	U. S. Weather Bureau.
Laramie	Albany	7,188	22																	University of Wyoming.
Leo	Carbon	6,878	11	17.6	− 2.7	41d	14	− 28d	6	36d	0.17	− 0.45	0.13	1.5	2	9d	3d	15d	sw.	C. A. Cowdin.
Lolobama Ranch	Park	7,052	9	15.0		40	31	− 38	6	53	0.15		0.10	3.0	2	13	16	2	w.	Mary E. Painter.
Lovell	Bighorn	3,825	7	19.8		55	25	− 22	6	50	0.53		0.45	6.5	3	13	11	7	s.	R. Fred Harrison.
Lusk	Niobrara	5,007	22	25.2	+ 2.2	53	13†	− 31	6	45	0.24	− 0.26	0.12	3.0	3					D. E. Goddard.
Manville	do	5,050	3								0.60		0.30	6.4	3	7	20	4	sw.	L. C. Stoddard.
Moorcroft	Crook	4,111	9	19.7		55	25	− 16	6	52	0.40		0.10	9.0	8	13	4	14	n.	C. T. McCampbell.
Moore	Albany	6,000	12	26.2	− 1.3	52	14	− 28	6	35	0.36	− 0.08	0.11	10.0	6	9	16	6	w.	Edwin Moore.
Newcastle	Weston	4,319	6	18.6		50	15	− 26	6	37	0.72		0.48	9.0	4	12	8	11	n.	Dr. S. W. Johnson.
Pathfinder	Natrona	5,735	7	21.5		46	28	− 20	6	36	0.05		0.03	4.0	3	14	10	7	sw.	U. S. Reclamation Service.
Pinebluff	Laramie	5,038	10	23.0		56	28	− 28	6	39	0.38		0.36	4.2	2	17	11	3		C. L. Beatty.
Pine Ridge	Crook		1								0.31		0.15	4.0	9	11	10	10	w.	J. E. S. Altaffer.
Powell	Park	4,376	5	20.6		55	28†	− 20a	6	41	0.18		0.15	2.0	2	14	4	13	nw.	U. S. Reclamation Service.
Rawlins	Carbon	6,748	11	19.4	− 3.4	41	28†	− 22	6	34	0.14	− 0.48	0.12	1.7	2	9	6	16	w.	E. J. Ehrenfeld.
Rock River	Albany										0.10		0.10	1.0	1	20	6	5	e.	Rock Creek Conservation Co.
Rockypoint	Crook		1								0.87		0.30	10.0	9	8	11	12	nw.	P. Woxen.
Saratoga	Carbon	6,785	15	22.1	− 0.5	48	14	− 26	6	35	0.55	− 0.20	0.50	6.5	2	16	7	8	w.	R. G. Hamilton.
Seven-mile Creek	do		2	16.4		39	22†	− 37	6	42	0.77		0.50	9.5	4	16d	2d	9d	w.	U. S. Forest Service.
Sheridan	Sheridan	3,790	18	14.4	− 5.0	54b	25	− 34b	6	67b	1.91	+ 1.04	0.66	19.6	12	4	12	15	nw.	U. S. Weather Bureau.
Shoshone Dam	Park	5,385	7	26.1		52	28	− 13	6	48	0.45		0.23	5.7	6	21	4	6	w.	U. S. Reclamation Service.
Soldiers Home	Johnson	4,635	21																	Joel C. Smiley.
South Pass City	Fremont	7,873	11	10.3		34	15†	− 39	6	34	0.75		0.11	15.5	12	7	17	7	sw.	John Sherlock.
Sundance	Crook	4,750	1	16.6		45a	18	− 25b	6	50b	1.95		0.45	26.0	10	9a	5a	16a	w.	Geo. W. Ashdown.
Thermopolis	Hot Springs	4,350	9	22.1		55	25	− 20	6	46	0.09		0.03	2.9	5	18	10	3	sw.	A. L. Duhig.
Thornton	Weston		1																	Geo. W. Ferguson.
Ulm	Sheridan	4,448	1	18.4		48	25	− 23	6	45	0.75		0.21	11.5	6	13	11	7	nw.	W. H. Coleman.
Verona	do	4,360	4								1.32		0.40	15.0	6	7	12	12	nw.	O. A. Roode.
Wheatland	Platte	4,700	2	24.5		55e	14	− 27e	7	36e	0.37		0.36	3.8	2	21e	2e	3e	w.	A. de F. Snively.
Wiants Ranch	Carbon	7,400	3								0.35		0.17	8.0	3				sw.	Ira G. Wiant.
Woodrock	Sheridan		2								2.51		1.00	24.0	7	11	8	12	sw.	U. S. Forest Service.
Worland	Washakie		2	17.3		52	28	− 27	6	44	0.21		0.15	2.6	4	15	12	4	nw.	Prof. B. C. Buffum.
Wyncote	Goshen	4,207	6	25.0		57	29	− 36	7	49	0.11		0.08	0.5	2	10	19	2	w.	U. S. Reclamation Service.
Yellowstone Park	Yellowstone Park.	6,200	25	13.5	− 4.1	36	25	− 32	6	31	2.60	+ 0.36	0.66	26.8	22	5	6	20	s.	U. S. Weather Bureau.
Fairview Dome	do	7,000	8	16.2		51	26	− 47	6	63	2.10		0.48	26.0	9	10	10	11	sw.	U. S. Army.
Fountain	do	7,220	7	9.0		38	27	− 46	5	64	3.92		0.64	49.0	13	11	1	19	w.	Do.
Gallatin	do		2								1.92		0.40	24.0	7	7	9	15	n.	Do.
Grand Canyon	do	7,900	6																	Do.
Lake Yellowstone	do	7,733	9	7.4		29	15†	− 48	6	44	3.78		0.50	38.5	17	6	1	24	nw.	Do
Norris	do	7,525	9								1.96		0.40	24.5	12	3d	2d	22d	w.	Do.
Riverside	do	6,500	7								2.82		0.64	28.2	13	3	7	21	s.	Do.
Sylvan Pass	do	7,000	6																	Do.
Thumb	do	7,772	7																	Do.
Tower Falls	do	6,250	4	11.8		38	25	− 44	6	47	2.69		0.75	29.7	12	11	8	12	nw.	Do.
Upper Geyser Basin	do	7,395	9	9.4		34	14	− 45	6	43	3.65		0.70	42.0	3	9	5	17	nw.	Do.
Montana.‡																				
Adel	Cascade	5,200	14	15.4	− 4.1	47	28	− 26	13†	62	2.55	+ 1.51	0.60	25.5	12	14	4	13	w.	Mrs. Bessie F. Burch.
Agricultural College	Gallatin	4,700	15	20.0	+ 0.7	47	28	− 16	6	50	0.78	− 0.03	0.30	13.7	7	7	2	22	sw.	J. L. McGraw.
Augusta	Lewis and Clark	4,071	14	13.2	− 7.2	52	28	− 36	6†	73	1.80	+ 1.13	1.30	18.0	3	12	12	7	w.	C. C. Covington.
Babb	Teton	4,461	6	3.2		40	28	− 29	5	47	1.43		0.18	14.3	15	4	13	14	w.	U. S. Reclamation Service.
Bald Butte	Lewis and Clark	6,500	3								4.38		1.00	63.1	17	6	4	21		M. W. Alderson.
Bigtimber	Sweet Grass	4,072	7	23.6		53	27	− 23	13	65	0.20		0.20	2.0	1	12	1	18	w.	F. A. Severance.
Billings	Yellowstone	3,115	17	16.8	− 5.4	58	28	− 31	20	53	0.43	− 0.32	0.10		7	11	4	16	sw.	Dean J. Cole.
Birch Creek	Teton	4,060	1																	U. S. Reclamation Service.
Blackleaf	do	4,260	5	9.6		50	28	− 31	13	67	0.25		0.12	2.0	6	13	3	15	w.	Roy McNeal.
Boulder Nursery	Jefferson	4,920	17	18.6	+ 0.8	49	28	− 25	6	50	1.01	+ 0.37	0.27	8.8	13	4	17	10	s.	U. S. Forest Service.
Bowen	Beaverhead	6,060	6																	B. B. Lawrence.
Bridger	Carbon	3,664	4	17.8		54	25	− 29	5	47	0.29		0.13	16.0	4	3b	17b	9b	n.	L. E. Gard.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Montana—Continued.																				
Broadview	Yellowstone		6	16.6	.....	54	28	− 29	6	55	0.28	.....	0.13	6.7	5	16	8	7	nw.	Thos. S. Hunt.
Browning	Teton	3,980	4	9.2	.....	47	29	− 31	14	57	0.26	.....	0.08	3.0	7	6	9	16	w.	U. S. Reclamation Service.
Busby	Rosebud		9	12.6	.....	48	3	− 35	6	58	0.88	.....	0.27	17.0	10	5	12	14	sw.	Rev. G. A. Linscheid.
Busteed	Sweet Grass		5	19.0	.....	55	1	− 28	13	58	0.56	.....	0.24	12.3	8	10	13	8	w.	T. H. Busteed.
Canyon Ferry	Lewis and Clark	3,644	14	18.2	+ 0.6	49	2	− 19	13	42	0.20	− 0.22	0.08	3.0	4	12	9	10	nw.	W. L. Kirk.
Cascade	Cascade	3,361	8	17.6	.....	54	28	− 30	6†	67	1.12	.....	0.26	12.9	10	5	13	13	sw.	Dr. E. E. James.
Chessman Reservoir	Lewis and Clark	5,275	4	17.1	.....	45	28	− 31	6	39	2.17	.....	0.35	31.0	15	21	1	9	nw.	C. D. Schmidt.
Chester	Hill	3,140	9	10.4	.....	45	2	− 41	13	62	0.18	.....	0.06	1.8	4	21[a]	2[a]	7[a]	sw.	E. D. Keith.
Chinook	Blaine	2,502	14	7.5	− 5.1	43	25†	− 40	6†	53	0.86	+ 0.25	0.25	6.8	8	4	20	7	w.	T. O'Hanlon Co.
Clearcreek	....do		7	10.3	.....	44	2†	− 30	20	53	2.55	.....	0.65	25.5	6	13[a]	11[a]	6[a]	sw.	Cortez Sedgewick.
Clydepark	Park		1	22.4	.....	48	28	− 27	6	46	0.23	.....	0.10	4.5	4	10	6	15	w.	Frank Taylor.
Conrad	Teton		2	−1.2	.....	46	2	− 34	18†	58	1.20	.....	0.50	12.8	7	8	12	11	nw.	Robert J. Kelly.
Copper	Meagher		8								0.76	.....	0.20	10.0	13	3	14	14	w.	Orville Harris.
Crow Agency	Rosebud	3,041	30	16.8	− 1.8	52	28	− 30	20	58	1.11	+ 0.34	0.35	10.5	7	8	20	3	w.	Harry Throssel.
Culbertson	Valley	1,927	10	5.1	− 2.3	42	26†	− 35	20	50	0.70	+ 0.23	0.20	5.5	5	5	12	14	nw.	G. H. Coulter.
Cut Bank	Teton	3,700	14	11.3[e]	− 5.3	46[e]	29	− 34[e]	6	60[e]	0.48	− 0.09	0.18	9.0	4	17[e]	5[e]	2[e]	.....	Chas. N. Thomas.
Denton	Fergus	3,500	4	14.5	.....	48	28	− 24	19	60	1.43	.....	0.40	24.7	15	10	3	18	w.	P. J. Griesenauer.
Dillon	Beaverhead	5,147	15	23.6	+ 1.9	41	3†	− 16	6	37	0.61	− 0.30	0.20	6.1	5	15	7	9	sw.	Prof. J. E. Monroe.
Dry Wolf Camp	Csacade	6,000	4								3.51	.....	1.00	37.0	14	9	7	15	nw.	Mrs. Harriet R. Eveleth.
Dunkirk	Teton	3,293	1								0.50	.....	0.15	5.9	7	19	3	9	sw.	B. C. Protzman.
East Gallatin River	Gallatin	6,000	4																	John Eberhart.
Ekalaka	Custer		12	13.5	− 2.0	45	14†	− 34	6	57	0.20	− 0.49	0.08	2.0	5	10	12	9	w.	William Freese.
Fallon	....do	2,208	8	12 2[e]	.....	49	28	− 33[f]	20	50[f]	0.25	.....	0.10	1.5	3	16	9	6	w.	Mrs. A. C. Gifford.
Findon	Meagher	6,000	4	18.2	.....	43	28	− 19	6	34	0.91	.....	0.13	15.9	16	6	9	16	w.	Lewis Cameron.
Fish Creek	Silver Bow	8,500	3	12.6	.....	38	28	− 38	5	48	0.91	.....	0.30	24.8	9	8	7	16	w.	O. B. Tilton.
Flathead Creek	Gallatin	6,000	2	23.7	.....	60	2	− 21	5	50	0.64	.....	0.18	6.6	6	9	2	20	nw.	Alta Williams.
Forsyth	Rosebud	2,514	6	12.9	.....	53	2	− 37	6	53	1.13	.....	0.75	11.0	4	2	15	14	ne.	H. Mackenzie.
Fort Benton	Chouteau	2,630	33	10.0	− 8.9	46	28	− 39	19	49	1.30	+ 0.57	0.60	13.0	4	15	9	7	.....	Jere Sullivan.
Fort Shaw	Cascade	3,500	24	17.6	− 3.2	53	28	− 32	19	69	1.12	+ 0.54	0.56	19.0	8	15	3	13	sw.	U. S. Reclamation Service.
Fort William Henry Harrison.	Lewis and Clark	4,004	9	19.0	+ 0.9	50	29	− 20	6	33	.....	.....	.....	.....	.....	3	6	22	nw.	Post Hospital.
Foster	Yellowstone		3	15.0	.....	53	28	− 32	6†	59	0.57	.....	0.15	3.7	9	10	13	8	nw.	E. K. Bowman.
Garneill	Fergus	5,500	4																	Thos. E. Scally.
Glasgow	Valley	2,092	16	6.6	− 0.3	49	29	− 32	13†	42	0.95	+ 0.47	0.50	2.5	5	15	9	7	w.	W. M. Leonard.
Glendive	Dawson	2,009	22	10.4	− 0.9	51	28	− 29	20	45	0.43	− 0.29	0.15	4.7	4	13	11	7	s.	E. C. Leonard.
Goldbutte	Hill		5	9.5	.....	47	28	− 30	13	55	1.03	.....	0.38	11.0	6	14	7	10	w.	Joseph Bertheiote.
Graham	Custer		7	13.4	.....	48	2	− 33	7†	68	0.87	.....	0.30	12.4	9	8	13	10	sw.	J. S. Rue.
Great Falls	Cascade	3,350	21	17.9	− 5.1	55	28	− 22	5†	58	1.25	+ 0.56	0.24	24.0	11	3	23	5	sw.	Robert Deardorf.
Harlowton	Meagher	4,165	5	11.8	.....	50	29	− 39	13	79	0.18	.....	0.04	1.8	8	5	9	17	w.	Joseph Muir.
Havre	Hill	2,505	33	6.9	− 6.6	44	2	− 36	20	60	1.46	+ 0.77	0.61	14.2	11	1	10	20	sw.	U. S. Weather Bureau.
Helena	Lewis and Clark	4,110	33	19.6	− 0.4	50	28	− 17	13	41	0.79	− 0.14	0.20	13.5	12	3	6	22	sw.	Do.
Highwood	Chouteau		6								2.06	.....	0.60	29.6	14	7	3	21	sw.	W. S. McCord.
Hinsdale	Valley	2,168	1																	D. L. Blankenship.
Huntley	Yellowstone	3,014	7	17.6	.....	56	28	− 30	5†	56	0.41	.....	0.17	7.7	5	11	13	7	w.	U. S. Reclamation Service.
Jordan	Dawson		7	10.6	.....	50	1	− 38	6	62	0.80	.....	0.20	10.0	5	5[j]	0[j]	14[j]	w.	W. C. Henderson.
Knobles Ranch	Hill		2								0.87	.....	0.20	13.9	10	15	9	7	w.	F. H. Knoble.
Lewistown	Fergus	4,010	15	13.4	− 6.7	48	27	− 27	19	65	1.31	+ 0.43	0.27	30.5	12	6	6	19	w.	W. W. Watson.
Lonetree	Chouteau	3,280	7	16.0	.....	56	28	− 28	6	70	2.19	.....	1.10	24.0	8	9	3	19	w.	E. Wilson.
Lothair	Hill			5.4	.....	44	3†	− 38	20	48	0.82	.....	0.30	8.0	3	.....	.....	.....	.....	James H. Whiteley.
Lytle	Chouteau		1																	J. F. Fait.
Malta	Valley	2,240	6	7.0	.....	43	29	− 37	20	45	0.37	.....	0.12	7.0	6	8	6	17	w.	U. S. Reclamation Service.
Medicine Lake	....do		2	4.2	.....	41	28	− 39	12	41	0.21	.....	0.10	6.0	4	20	3	8	sw.	J. S. Collier.
Mildred	Custer		4								0.04	.....	0.03	0.3	2	5	24	2	nw.	Leon B. Clark.
Miles City	....do	2,371	21	11.5	− 3.0	47	25	− 34	5	41	1.80	+ 1.18	1.27	18.4	15	5	14	12	.....	U. S. Weather Bureau.
Norris	Madison	4,845	6	25.2	.....	51	25	− 11	6	37	0.19	.....	0.10	3.2	4	10	8	13	s.	Madison River Power Co.
Olsen Creek	Jefferson	6,345	4																	Robert Olsen.
Pinegrove	Musselshell		1	17.6	.....	46	28	− 20	6	34	3.50	.....	1.50	38.0	10	9	10	12	w.	G. W. White.
Pipestone Pass	Jefferson	7,000	4								0.63	.....	0.32	16.1	7	9	10	12	w.	Mrs. T. Keirmeyer.
Plevna	Custer	2,757	1	13.0	.....	46	29	− 30	20	56	0.30	.....	0.17	6.0	8	15	9	7	w.	C. C. Conser.
Poplar	Valley	2,020	27	6.4	− 1.3	44	28	− 36	21	42	0.20	− 0.45	0.20	2.0	1	19	4	8	w.	H. M. Cosler.
Red Lodge	Carbon	5,548	13	16.7	− 2.5	46	3	− 29	5†	48	1.17	+ 0.30	0.31	22.1	8	5	15	11	nw.	I. A. Draper.
Renova	Jefferson	4,383	14	24.8	+ 3.6	52	25	− 16	6	52	0.20	− 0.29	0.20	2.5	1	7	11	13	sw.	F. B. Elmer.
Ryegate	Musselshell	3,640	3	17.3	.....	57	28	− 36	6†	71	0.56	.....	0.30	12.0	4	12	2	17	w.	H. Scherfenberg.
Savage	Dawson	2,050	7	10.0	.....	49	28	− 31	20	49	0.33	.....	0.10	2.0	5	11	11	9	nw.	U. S. Reclamation Service.
Shelby	Teton	3,276	1																	Olif C. Fjield.
Sidney	Dawson		2	11.7	.....	54	1	− 31	12†	55	0.34	.....	0.24	1.5	3	13	10	8	w.	Fred W. Arndt.
Springbrook	....do		11	9.4	− 2.7	45	25†	− 35	11	66	1.63	+ 0.65	0.42	10.5	10	8	7	16	sw.	Mrs. H. L. Miller.
Sunlit Farm	Blaine		1	5.4	.....	39	25	− 42	20	60	1.25	.....	0.90	7.5	6	9	9	13	nw.	C. R. Noyes.
Sun River Canyon	Teton	4,650	1	17.4	.....	62	29	− 27	13	65	2.19	.....	0.76	25.0	5	14	1	16	w.	U. S. Reclamation Service.
Three Forks	Gallatin	4,066	2	23.0	.....	52	28	− 19	13	58	0.21	.....	0.10	2.6	4	15	7	9	sw.	C. E. Adams.
Utica	Fergus	5,000	18	14.8	− 7.0	50	28	− 28	20	56	1.45	+ 0.80	0.90	17.1	5	16	6	9	w.	P. W. Korell.
Valentine	....do		6	9.8	.....	46	29	− 48	6	63	2.28	.....	1.50	31.7	5	15	3	13	w.	B. M. Bean.
Valier	Teton		1	15.6	.....	46	2†	− 29	20	51	0.48	.....	0.19	8.0	4	24	0	7	w.	R. M. Templeton.
Wall Rock Mountain	Broadwater	5,600	4								1.10	.....	0.30	8.3	11	9	18	4	nw.	D. L. Doig.
Wheaton	Musselshell		1	20.0	.....	50	2	− 24	20	44	1.95	.....	0.45	19.5	7	16	8	7	w.	P. O. Balgord.
White's Ranch	Custer		1								0.19	.....	0.08	1.6	4	9	11	11	nw.	Glen A. White.
White Sulphur Springs	Meagher		1	18.0	.....	44	28†	− 25	6†	60	0.38	.....	0.17	8.5	6	5	15	11	.....	P. R. Wild.
Wilder	Fergus		2	5.4	.....	50	28	− 41	6	39	1.73	.....	0.67	19.0	9	2	13	16	w.	J. Rogers.
Wolf Creek	Lewis and Clark	4,000	9	20.3	.....	52	2†	− 22	5†	62	0.87	.....	0.26	4.5	12	8	12	11	se.	A. J. Reed.
North Dakota.																				
Aplin	Oliver		6	6.8	.....	39	25†	− 40	12	38	0.33	.....	0.20	4.5	4	14	4	13	nw.	J. C. Hagelbarger.
Arnegard	McKenzie		1																	A. B. Waterman.
Ashley	McIntosh	2,001	16	8.6	+ 0.9	39	25†	− 32	12	37	0.10	− 0.36	0.10	1.0	1	16	8	7	nw.	R. C. Miles.
Beach	Golden Valley	2,576	7	10.0	.....	45	28	− 35	11	57	0.46	.....	0.30	3.0	4	21	3	7	nw.	D. J. Steiner.
Belfield	Stark	2,583	2																	Harry Dence.
Berthold Agency	McLean	2,082	19	6.1	− 0.6	44	28	− 43	12	42	0.47	+ 0.06	0.18	3.6	4	9	11	11	nw.	C. L. Hall.
Bismarck	Burleigh	1,674	39	5.6	− 1.1	42	28	− 37	12	40	0.37	− 0.17	0.12	3.8	5	10	12	9	nw.	U. S. Weather Bureau.
Buford	Williams	1,944	25	7.8	+ 2.0	43	28	− 35	12	44	0.70	− 0.14	0.20	7.0	4	4	21	6	nw.	C. H. McCune.
Carson	Morton		1	10.3	.....	49	29	− 36	12	42	0.10	.....	0.10	1.0	1	12	8	11	.....	D. J. Basquin.
Dickinson	Stark	2,543	21	9.9	− 0.5	46	28	− 38	12	46	0.13	− 0.32	0.05	6.0	4	7	16	8	nw.	L. R. Waldron.
Edgeley	Lamoure	1,468	12	6.6	− 1.2	41	25	− 34	12	45	0.31	+ 0.04	0.21	3.1	3	11	11	9	nw.	O. A. Thompson.
Energy	McLean																			T. L. Stanley.
Epping	Williams		5								0.56	.....	0.30	6.0	6	19	1	11	w.	M. E. Uggen.
Fullerton	Dickey	1,439	15	6.5	− 1.9	40	25	− 29	12	40	0.56	− 0.09	0.45	5.6	3	14	7	10	nw.	F. O. Alin.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
North Dakota—Contd.																			
Garrison	McLean	1,901	18	3.4	− 3.8	38	28†	− 43	12	38	0.70	+ 0.19	0.30	7.0	4	5	12	14	nw.	G. L. Robinson.
Haley	Bowman		5	9.6	.....	50[b]	29	− 33[b]	12	48[b]	0.16	.....	0.10	2.5	2	.....	.....	.....	nw.	A. O. Lawrence.
Hettinger	Adams	2,253	5	11.0	.....	52	25	− 34	12	50	T.	.....	T.	T.	0	7	10	14	nw.	W. R. Lanxon.
Howard (near)	Divide	2,275	4	3.0	.....	35	28†	− 47	20	47	0.60	.....	0.20	5.5	4	9	9	13	nw.	C. P. Amsbaugh.
Jamestown	Stutsman	1,390	21	3.0	− 4.2	39[a]	28	− 36	12	47[a]	1.30	+ 0.76	0.50	13.0	8	16	4	11	nw.	Thos. Pettigrew.
Krem	Mercer																			Fred Krause, jr.
Lamoine	Kidder		5	3.0	.....	37	25†	− 36	12	41	0.80	.....	0.40	8.0	5	16	7	8	nw.	E. V. Virgin.
McHenry (near)	Eddy	1,509	3																	John Knox.
Marmarth (near)	Bowman		4	12.2	.....	45	25†	− 27	13	52	0.14	.....	0.05	8.2	5	13	8	10	w.	S. P. Grane.
Marstonmoor	Stutsman		4	−1.2	.....	36	29	− 54	12	42	0.40	.....	0.23	4.0	3	14	11	6	nw.	H. H. McCumber.
Medora	Billings	2,225	19	18.4	+ 3.6	60	28	− 44	11	50	1.97	+ 1.37	0.85	2.8	4	12	9	10	nw.	J. W. Hesser.
Malville	Foster	1,590	15	1.0	− 3.4	38[b]	29	− 30[b]	12	38[b]	0.60	+ 0.25	0.40	6.0	3	.....	.....	.....	nw.	J. P. Kidder.
Mott	Hettinger		6	7.7	.....	52	28	− 35	12	45	0.92	.....	0.22	6.0	7	11	7	13	nw.	O. H. Opland.
Napoleon	Logan	1,975	21	4.9	− 1.4	38	26	− 41	12	50	0.20	− 0.31	0.08	2.0	3	15	3	13	w.	C. J. Hoof.
New England	Hettinger	2,400	19	10.0	− 4.1	46	28	− 33	11	45	0.50	+ 0.06	0.30	4.0	3	15	7	9	nw.	J. M. Connolly.
New Rockford	Eddy	1,531	2	3.5	.....	39	2	− 37	12	38	0.50	.....	0.20	5.0	4	7	13	11	nw.	J. V. M. Sundberg.
New Salem	Morton	2,163	8	7.5	.....	41	28	− 35	12	49	0.40	.....	0.20	4.0	3	12	13	6	nw.	J. Christiansen.
Orange	Adams		4	10.0	.....	47	28	− 31	12	41	0.10	.....	0.10	1.0	1	19	5	7	nw.	J. E. Goforth.
Ranger	Billings										0.48	.....	0.30	4.0	3	16	3	12	nw.	R. E. Sheriff.
Steele	Kidder	1,857	16	−1.6	−10.5	40	28	− 36	12	25	0.29	− 0.06	0.10	4.7	5	17	11	3	nw.	H. S. Wood.
Turtle Lake	McLean		1								0.30	.....	0.20	3.0	2	.....	.....	.....	nw.	E. G. Ranum.
Washburn	....do	1,731	15	5.0	− 2.7	39[a]	25†	− 37[a]	12	44	0.23	− 0.20	0.15	2.8	3	.....	.....	.....	nw.	W. R. Peterson.
Williston	Williams	1,875	34	5.0	− 1.5	41	28	− 35	12	42	0.52	− 0.06	0.18	3.4	7	6	6	19	n.	U. S. Weather Bureau.
South Dakota.																				
Aberdeen	Brown	1,300	23	8.6	− 1.0	46[a]	28	− 25	20	55[a]	0.55	− 0.26	0.40	5.5	2	9	16	6	w.	D. G. Gallett.
Academy	Charles Mix		14	21.8	+ 2.5	61	29	− 19	6	54	0.11	− 0.32	0.06	0.8	3	16	12	3	w.	I. T. Lothrop.
Alexandria	Hanson	1,352	25			59	29				T.	− 0.56	T.	T.	0	16	9	6	nw.	C. H. Stillwell.
Armour	Douglas	1,521	18	18.3[d]	+ 1.2	60[d]	25	− 19[d]	6†	54[d]	T.	− 0.60	T.	T.	0	.....	.....	.....	.....	T. J. Markey.
Bellefourche	Butte	3,000	5	23.5	.....	54	25†	− 29	7	68	0.54	.....	0.32	5.0	5	7	16	8	nw.	U. S. Reclamation Service.
Brookings	Brookings	1,636	24	15.4	+ 3.4	53	25	− 18	31	48	0.02	− 0.41	0.02	0.2	1	13	6	12	nw.	Experiment Station.
Bryant	Hamlin	1,846	1								T.	.....	T.	T.	0	11	19	1	nw.	J. W. Ault.
Camp Crook	Harding	3,000	20	10.2	− 7.9	43	1†	− 39	6	51	2.02	+ 1.47	1.80	11.1	6	12	9	10	nw.	U. S. Forest Service.
Canton	Lincoln	1,248	18	18.7	+ 0.8	54	25†	− 17	12	50	T.	− 0.50	T.	T.	0	22	3	6	nw.	John H. Holsey.
Cascade Springs	Fall River	3,422	5	20.0	.....	55	25†	− 32	7	45	0.16	.....	0.15	1.6	2	14	11	6	w.	Fred Nœrenberg.
Castlewood	Hamlin	1,685	8	13.9	.....	50	25	− 20	6†	43	0.01	.....	0.01	0.3	1	8	5	18	nw.	M. N. Bradley.
Centerville	Turner	1,229	16	18.9	+ 3.0	58	25	− 15	12	45	0.09	− 0.41	0.03	0.9	4	5	14	12	nw.	Frank Williams.
Chamberlain	Brule	1,363	14																	W. B. Van Horn.
Clark	Clark	1,779	21	13.1	+ 2.3	53	16	− 22	12†	48	0.09	− 0.43	0.02	4.5	5	16	12	3	nw.	O. H. La Craft.
Cottonwood	Stanley	2,414	5	17.8	.....	57	3	− 33	6†	67	0.18	.....	0.13	2.9	3	11	13	7	nw.	Experiment Station.
Custer	Custer	5,316	1								0.30	.....	0.20	3.0	2	18	7	6	nw.	R. P. Imes.
Daviston	Perkins		3																	P. A. Sattler.
Deadwood	Lawrence	4,535	4	20.2	.....	52	25†	− 27	6	56	2.05	.....	1.00	18.5	8	14	5	12	.....	R. E. Grimshaw.
Deerfield	Pennington	6,000	4								0.82	.....	0.27	12.7	12	16	12	3	nw.	Frank E. Miller.
De Smet	Kingsbury	1,726	20								T.	− 0.51	T.	T.	0	.....	.....	.....	.....	W. E. White.
Dowling	Stanley	2,250	4	17.7	.....	53	25†	− 29	7	55	0.65	.....	0.30	6.8	5	14	8	9	nw.	M. P. Dowling.
Dumont	Lawrence	6,195	4								3.70	.....	0.96	27.6	10	16	7	8	nw.	A. B. Wood.
Eagle Butte	Dewey	2,415	1	14.0	.....	49	25	− 23	12	45	0.22	.....	0.15	2.2	2	8	20	3	.....	Dr. John F. Chandler.
Eales	Potter		2								0.29	.....	0.16	2.9	4	12	11	8	nw.	A. H. Peterson.
Elk Mountain	Custer	4,700	4								0.50	.....	0.40	5.0	3	14	11	6	nw.	James E. Blaine.
Ellingson	Perkins		1																	Carl G. Moen.
Englewood	Lawrence	5,723	4								1.81	.....	0.64	18.9	9	4	17	10	nw.	W. P. Wagner.
Eureka	McPherson	1,884	4	7.8	.....	42	25	− 36	12	40	0.10	.....	0.05	1.5	3	9	20	2	nw.	Experiment Station.
Fairfax	Gregory		9	22.2	.....	64	29	− 21	6	52	0.36	.....	0.31	4.1	2	21	10	0	nw.	U. G. Stevenson.
Faulkton	Faulk	1,595	18	12.4	+ 1.9	51	25	− 23	6	40	0.05	− 0.27	0.05	0.5	1	20	5	6	nw.	Miss Belle Talcott.
Flandreau	Moody	1,565	23	16.8	+ 4.0	53	25	− 18	31	43	0.05	− 0.36	0.05	0.5	1	7	5	19	n.	D. R. McLean.
Forestburg	Sanborn	1,231	21	18.4	+ 5.6	62	28	− 20	6	56	T.	− 0.64	T.	T.	0	22	8	1	nw.	S. S. Judy.
Fort Meade	Meade	3,624	30	19.3	− 2.3	55	26†	− 31	12	67	0.95	+ 0.26	0.40	9.5	4	3	10	18	w.	Post Hospital.
Frederick	Brown	1,371	4	4.8	.....	44	25	− 31	12	67	0.07	.....	0.05	0.7	2	6	9	16	nw.	J. E. Jeffers.
Gannvalley	Buffalo		14	19.3[j]	+ 4.4	58[j]	24	− 23[j]	10	39[j]	T.	− 0.64	T.	T.	0	.....	.....	.....	.....	A. L. Hanson.
Greenmont	Lawrence	6,430	4								2.71	.....	0.90	28.5	7	3	19	9	nw.	H. C. Hoffbuhr.
Greenwood	Charles Mix		19	23.8	+ 2.7	65	29	− 16	6	49	0.30	− 0.25	0.15	2.2	3	12	13	6	nw.	T. C. Williamson.
Hardingrove	Stanley		1	17.2	.....	52	16	− 28	13	60	0.25	.....	0.21	3.2	4	4	17	10	nw.	Mrs. Laura Sinclair.
Hardy Ranger Station	Lawrence	6,600	3								2.16	.....	0.61	34.0	11	10	8	13	nw.	Mrs. Mary Schmidt.
Harveys Ranch	....do	6,282	3								2.90	.....	0.70	34.5	8	13	5	13	nw.	Jerome Harvey.
Hermosa	Custer	3,278	7	19.2	.....	61[a]	29	− 25[a]	5	63[a]	0.24	.....	0.22	3.0	2	13	14	4	n.	S. M. Booth.
Highmore	Hyde	1,890	20	16.2	+ 2.9	57	16	− 24	6	46	0.05	− 0.22	0.05	0.5	1	9	9	13	nw.	Experiment Station.
Hopewell	Stanley		3	16.4	.....	56	25	− 22	7	47	0.10	.....	0.05	1.0	2	10	15	6	n.	E. R. Myers.
Howard	Miner	1,564	21	14.6	+ 1.6	56[a]	25	− 23[a]	6	48[a]	0.02	− 0.31	0.02	0.5	1	12	17	2	nw.	J. J. Cox.
Howell	Hand		11	13.2	+ 2.5	56	25	− 25	6	50	0.05	− 0.31	0.02	0.7	3	17	11	3	nw.	M. A. Shuster, jr.
Huron	Beadle	1,306	31	15.2	+ 5.7	56	25	− 20	6	47	0.03	− 0.48	0.01	0.3	3	11	10	10	nw.	U. S. Weather Bureau.
Ipswich	Edmunds	1,530	16	10.0	− 0.7	46	25	− 29	12	43	0.22	− 0.20	0.22	3.5	1	9	19	3	nw.	H. J. Dailey.
Kadoka	Stanley	2,467	4	19.8	.....	60	29	− 24	6	58	0.11	.....	0.07	1.1	2	12	14	5	nw.	Rev. D. S. Brown.
Kennebec	Lyman	1,689	20	18.6	+ 2.0	60	16†	− 22	6	64	0.05	− 0.37	0.05	0.5	1	21	5	5	nw.	R. C. Van Horn.
Kimball	Brule	1,788	27	19.7	+ 4.2	58	25	− 18	6	41	T.	− 0.53	T.	T.	0	24	2	5	nw.	G. D. Rose.
La Delle	Spink	1,400	16	15.0	+ 3.1	54	25	− 24	6	50	0.10	− 0.57	0.05	2.0	3	18	4	9	nw.	E. L. Ebbert.
Lead	Lawrence	5,200	4	20.0	.....	47	25†	− 23	6	44	1.53	.....	0.57	20.1	10	17	7	7	nw.	E. F. Irwin.
Lemmon	Perkins	2,345	4	18.8[e]	.....	50[e]	29†	− 24[e]	20	64[e]	0.17	.....	0.10	1.5	3	.....	.....	.....	.....	Arthur T. Briggs.
Manderson	Shannon		7																	W. A. Spencer.
Marion	Turner	1,447	12	19.4	+ 3.9	58	29	− 16	31	49	T.	− 0.76	T.	T.	0	10	18	3	nw.	M. H. Dains.
Marston	Sully		5	15.3	.....	54	25	− 25	20	54	T.	.....	T.	T.	0	5	15	11	nw.	J. W. Kozel.
Meadow	Perkins			11.0	.....	46	28	− 25	20	44	0.30	.....	0.15	3.0	4	13	6	12	nw.	Hillard Wybenga.
Mellette	Spink	1,300	18	12.6	+ 0.6	54	29	− 24	6	46	0.09	− 0.33	0.04	0.9	4	15	7	9	nw.	Frank A. Howe.
Menno	Hutchinson	1,325	16	17.4	− 0.8	60	25	− 18	31	46	0.02	− 0.45	0.02	0.2	1	17	8	6	nw.	J. S. Headley.
Milbank	Grant	1,148	22	9.2	− 2.3	55	17	− 22	12	50	0.61	+ 0.01	0.28	4.5	6	18	4	9	nw.	Miss Mary Patridge.
Mitchell	Davison	1,312	19	17.2	+ 1.3	58	29	− 16	6†	55	0.06	− 0.49	0.03	1.0	2	12	16	3	nw.	C. W. Downey.
Mobridge	Walworth		2	10.4	.....	47	2	− 32	12	42	1.35	.....	0.40	9.5	4	5	4	22	nw.	Thomas J. Morris.
Murdo	Lyman	2,300	5	21.2	.....	63	26	− 18	6†	71	0.30	.....	0.30	3.0	1	14	11	6	nw.	L. C. Bode.
Oelrichs	Fall River	3,339	21	21.4	+ 0.1	58	25	− 29	6	49	0.20	− 0.77	0.20	2.0	1	12	15	4	sw.	J. E. Strouse.
Onaka	Faulk	1,600	1								0.34	.....	0.10	2.5	5	16	13	2	nw.	H. P. Camp.
Onida	Sully										T.	.....	T.	T.	0	11	13	7	nw.	E. E. Heywood.
Orman	Butte	2,920	7	17.4	.....	50	25	− 31	7	64	0.56	.....	0.28	10.5	6	11	8	12	nw.	U. S. Reclamation Service.
Ottumwa	Stanley		5	14.6	.....	56[b]	25†	− 32[b]	7	49[b]	0.50	.....	0.30	5.0	2	9	16	6	nw.	J. W. Bretz.
Parkston	Hutchinson	1,400	1								0.27	.....	0.09	3.5	5	20	8	3	.....	W. C. Rempfer.
Pierre	Hughes	1,572	21	18.6	+ 4.7	57	25	− 16	6	43	T.	− 0.46	T.	T.	0	10	15	6	nw.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***South Dakota*—Contd.**																				
Plankinton	Aurora	1,528	19								0.05	− 0.40	0.05	0.5	1	10	17	4	sw.	W. G. Andrews.
Pollock	Campbell		7	7.5		44	25	− 36	12	44	0.31		0.10	2.0	4	13	14	4	nw.	J. H. Jones.
Rapid City	Pennington	3,251	25	19.8	− 1.7	56	29	− 22	6	64	0.62	+ 0.18	0.24	5.6	6	8	14	9	w.	U. S. Weather Bureau.
Redfield	Spink	1,295	15	11.6	− 0.4	50	29	− 23	7	58	0.01	− 0.30	0.01	0.1	1	20	5	6	sw.	A. S. Hall.
Rochford	Pennington	5,228	3								0.86		0.27	16.1	10	7	18	6	nw.	Mrs. M. E. Deffenbaugh.
Rosebud	Todd	2,600	19																	W. M. Ege.
Roslyn	Day		7	10.4		49	16†	− 27	6	40	0.60		0.40	5.7	5	10	13	8	nw.	O. O. Floren.
Selby	Walworth		5	10.3		41[a]	25	− 27[a]	12	37[a]	0.27		0.10	2.5	3	16	9	6	nw.	Miss Gertrude Hall.
Sioux Falls	Minnehaha	1,400	22	19.0	+ 4.7	55	25†	− 18	31	43	0.05	− 0.51	0.04	1.0	2	11	14	6	s.	J. H. Bechtold.
Sisseton	Roberts	1,202	7	9.3		42[a]	27	− 23	11	43[a]	0.10		0.07	2.5	2	20	0	11	nw.	George Gray.
Sorum	Perkins		2	12.3		52	21	− 30	6†	53	0.42		0.18	7.0	3	13	11	7	nw.	M. S. Eberhart.
Spearfish	Lawrence	3,647	24	21.6	− 3.6	56	25	− 20	6	56	0.66	− 0.17	0.40	12.0	7	17	13	1	w.	A. E. Johnson.
Stephan	Hyde	1,840	9	17.5		56	29	− 23	12	59	0.03		0.03	0.3	1	13	12	6	nw.	Rev. A. Mattingly.
Tama	Meade		3	11.1		45	29	− 39	6	54	0.01		0.01	0.1	1	9	18	4	nw.	Mrs. Monte Franks.
Timber Lake	Dewey	2,163	1	12.0		47	28	− 26	20	41	0.36		0.26	5.5	3	17	10	4	nw.	R. T. Holihan.
Tyndall	Bonhomme	1,418	16	21.2	+ 4.3	61	25	− 14	6†	46	0.04	− 0.42	0.04	1.0	1	18	10	3	nw.	F. F. Chladek.
Vale	Butte	2,765	5	16.6		55	25†	− 37	7	62	0.58		0.40	7.0	3	6	23	2	nw.	U. S. Reclamation Service
Vermilion	Clay	1,222	12	21.5	+ 2.3	58	25	− 13	31	45	0.10	− 0.33	0.10	1.0	1	18	4	9	nw.	Prof. E. C. Perisho.
Waters Ranch	Lawrence	4,000	3								0.91		0.44	14.0	13	13	5	13	nw.	George Waters.
Watertown	Codington	1,735	19	10.1	− 0.1	50	16†	− 19	6†	51	0.10	− 0.39	0.07	1.5	2	9	9	13	nw.	Robert Q. Wood.
Wentworth	Lake		20	14.8	+ 3.0	54	25	− 18[a]	31	41[a]	T.	− 0.45	T.	T.	0	25	4	2	nw.	R. C. Zimmerman.
Wessington Springs	Jerauld	1,410	13	17.7	+ 4.0	58	29	− 18	6†	50	0.03	− 0.39	0.01	0.5	3				nw.	Mrs. N. J. Dunham.
White Lake	Aurora	1,646	4													10	4	17	nw.	Mrs. G. A. Rogers.
Winner	Tripp	2,000	1	17.8		62[a]	29	− 22[a]	5	62[a]	0.15		0.15	2.5	1	18	7	6	nw.	J. W. Barnum.
Wood	Mellette										0.25		0.15	2.5	2	15	10	6	sw.	Fred E. Kirch.
Yankton	Yankton	1,234	39	20.0	+ 4.5	60	29	− 13	31	41	0.08	− 0.48	0.04	0.9	4	9	13	9	nw.	U. S. Weather Bureau.
Minnesota.																				
Pipestone	Pipestone	1,710	12	15.2	+ 1.5	52	25	− 18	31	46	T.	− 0.40	T.	T.	0	17	12	2	nw.	A. L. Doan.
Colorado.																				
Arriba	Lincoln	5,243	7	24.6		57	29	− 18	7	42	0.20		0.20	1.5	1	24	3	4	sw.	C. A. Creel.
Auldhurst	Teller	8,500	3								0.93		0.30	11.5	5	16	7	8	s.	Miss Alice A. Auld.
Bennett (near)	Arapahoe	5,484	5								0.33		0.21	6.8	3	28	2	1	sw.	J. F. Egelhoff.
Boulder	Boulder	5,347	17	30.6	− 3.4	58	28†	− 22	7	42	0.49	+ 0.11	0.46	6.2	2	5	25	1	w.	Prof. J. A. Hunter.
Burlington	Kit Carson	4,160	10	27.0	− 1.7	63	29	− 18	6	46	0.15	− 0.18	0.15	4.0	1	16	11	4	nw.	W. P. Davis.
Cassells	Park	8,445	3								0.52		0.29	2.5	3	23	4	4	w.	Harriet M. Cassell.
Castle Rock	Douglas	6,220	21	25.2	− 2.8	60	3	− 37	6	63	0.36	− 0.04	0.26	12.5	3	21	6	4	se.	Thos. P. Vaughan.
Cheesman	Jefferson	6,890	10	26.8	− 4.5	58	28	− 27	6	50	0.50	+ 0.32	0.15	5.0	4	14	14	3	s.	J. G. Thornburg.
Cheyenne Wells	Cheyenne	4,279	21	27.0	− 1.6	62	29	− 12	6	45	0.60	+ 0.43	0.33	9.5	4	26	2	3	sw.	J. W. Adams.
Cope	Washington		16																	Mrs. Dora M. Christopher.
Corona	Grand	11,660	6	3.2		21	13†	− 27	5	28	3.66		1.10		12				w.	U. S. Weather Bureau.
Denver	Denver	5,272	41	30.4	+ 1.3	59	28	− 21	6	39	0.36	− 0.06	0.25	5.8	6	17	12	2	sw.	Do.
Edgewater	Jefferson	5,450	5	28.4		60	14	− 26	6†	51	0.33		0.31	6.0	2	16	12	3		N. P. Levin, M. D.
Estes Park Fish Hatch.	Larimer	8,000	4								0.45		0.20	9.0	4	12	9	10	w.	G. H. Thomson.
Fort Collins	do	4,985	34	23.4	− 3.2	58	29	− 30	7	47	0.30	− 0.15	0.14	4.5	4	15	9	7	nw.	Colorado Agricultural Col'ge.
Fort Lupton	Weld	4,907	3																	R. W. Benedict.
Fort Morgan	Morgan	4,319	15	23.0	− 2.2	60	29	− 29	7	55	0.25	+ 0.13	0.15	2.5	2	25	1	5	se.	Great Western Sugar Co.
Frances	Boulder	9,300	8	16.5		47	22	− 25	6	40	1.67		0.40	24.2	13	2	25	4	w.	C. W. Barry.
Frys Ranch	Larimer	7,500	3	21.2		47	28	− 36	6	47	0.69		0.35	8.5	4	19	5	7	w.	Norman W. Fry.
Georgetown	Clear Creek	8,550	11								0.45	− 0.06	0.19	8.8	5	12	9	10		H. L. Corbett.
Greeley	Weld	4,649	22	24.8	− 1.6	61	29	− 29	7	50	0.28	− 0.07	0.15	3.5	2	19	9	3	ne.	Burton Reynolds.
Grover (near)	do	5,076	9																	D. M. Porter.
Hartsel	Park	8,892	4								0.15		0.08	4.8	4	0	2	29	w.	Emily Kleinknecht.
Hawthorne	Boulder	6,000	4								0.81		0.38	17.0	4	16	13	2		B. E. Chesebro.
Holyoke (near)	Phillips	3,745	17	21.0	− 8.9	66	3	− 31	6	61	0.46	+ 0.30	0.28	7.0	2	16	8	7	sw.	A. C. Cauble.
Idaho Springs	Clear Creek	7,543	13	24.6	− 4.0	48	25†	− 29	6	36	0.30	− 0.02	0.08	7.2	7	12	15	4	w.	J. J. Willis
Julesburg	Sedgwick	3,465									0.09		0.05	1.0	2	8	19	4	w.	Great Western Sugar Co.
Kersey	Weld	4,571									0.15		0.15	3.0	1	21	8	2	se.	Do.
La Porte	Larimer	5,053	22								0.43	+ 0.05	0.20	7.0	3					P. A. Taft.
Le Roy (near)	Logan	4,380	24																	Chas. Green.
Longmont	Boulder	4,950	12	23.0	− 3.4	62[a]	29	− 31[a]	6	52	0.12	− 0.33	0.12	2.0	1	15[p]	0[p]	0[p]	sw.	Great Western Sugar Co.
Longs Peak (near)	Larimer	8,600	18	21.4	− 2.3	47	3	− 25	6	54	0.68	+ 0.05	0.33	11.0	4	18	5	8	n.	Enos A. Mills.
Merino	Logan										T.		T.	T.	0	20	7	4	sw.	Great Western Sugar Co.
Moraine	Larimer	7,775	23																	Chas. A. Chapman.
Platte Canon	Jefferson	5,492	14								0.66		0.62	9.0	4	22	7	2	sw.	Denver Union Water Co.
St. Cloud	Larimer	7,750	10								0.44		0.35	8.0	3	13	14	4	nw.	Miss Guilla Sivers.
Sedgwick	Sedgwick	3,539	5	26.2		60	3†	− 25	7	50	0.08		0.05	1.5	2	24	1	6	sw.	Edwin Lewis, M. D.
Silver Lake	Boulder	10,500	3																	F. R. Dungan.
Spicer (near)	Jackson	8,700	3	15.8		55	10	− 34	7	51	0.75		0.50	13.0	3	16	6	9	sw.	Frank W. Murphy.
Sterling	Logan	3,892	4	23.3		60	3†	− 22	7	57	0.05		0.05	2.5	2	22	5	4	sw.	Great Western Sugar Co.
Waterdale	Larimer	5,206	10	28.1	− 3.1	65[a]	3	− 30[a]	6†	58	0.30	+ 0.06	0.25	6.4	6					P. H. Boothroyd.
Wray	Yuma	3,512	17	26.9	− 2.2	65	29	− 18	6	45	0.41	+ 0.11	0.16	5.0	3	8	12	11	w.	J. C. Tuomey.
Yuma	do	4,138	22								0.15	− 0.26	0.08	3.5	3	16	12	3	nw.	Matthew Harr.
Nebraska.																				
Ainsworth	Brown	2,521	7	20.8		63	25	− 21	6	47	0.53		0.18	5.3	4	5	18	8	nw.	John M. Cotton.
Albion	Boone	1,747	17	19.2	− 2.6	64	29	− 21	8	42[b]	0.10	− 0.40	0.10	1.0	1	10	1	20	nw.	F. M. Weitzel.
Alliance	Boxbutte	3,968	20	22.6	− 1.1	55	29	− 29	7	49	0.05	− 0.50	0.05	1.0	1	20	10	1	nw.	J. A. Keegan.
Alma	Harlan	1,939	16	22.6	− 3.6	68	29	− 24	8	48	0.15	− 0.12	0.09	2.0	3	17	10	4	nw.	W. A. Sharpnack.
Arcadia	Valley	2,186	14								0.30	− 0.05	0.20	3.0	2	15	6	10	nw.	J. L. Owen.
Arden	Wheeler		2								0.21		0.12	2.0	3	16	13	2	n.	A. E. Johns.
Ashland	Saunders	1,100	27	23.8	+ 0.5	62	25	− 16	8	42	0.72	+ 0.15	0.40	7.0	3	16	11	4	sw.	Dr. A. S. Mansfelde.
Ashton	Sherman	2,061	21								0.02	− 0.17	0.02		1	14	6	11	n.	F. Rein.
Atkinson	Holt	2,108	6	20.0	+ 1.8	64	29	− 19	6	67[a]	0.20		0.10	2.0	2	16	10	5	nw.	C. J. Wilson.
Auburn	Nemaha	1,051	21	25.7	+ 0.6	59	25†	− 14	8	40	0.74	− 0.04	0.30	6.0	6	16	6	9	nw.	J. R. Huffman.
Aurora	Hamilton	1,792	19			64	29				0.30	− 0.02	0.20	3.0	2	19	4	8	nw.	A. D. Travis.
Beatrice	Gage	1,235	22	22.2	− 2.5	57	29	− 17	8	42	0.49	− 0.03	0.30		2	12	4	15	n.	H. E. Palmer.
Beaver City	Furnas	2,147	22	26.6	− 1.3	65	29	− 11	8	41	0.29	+ 0.05	0.29	3.0	1	18	8	5	nw.	T. M. Davis.
Bellevue	Sarpy	1,210	30	23.8	+ 1.7	58	25†	− 10	12	37	0.82	− 0.09	0.30	8.0	5	15	12	4	nw.	A. A. Tyler.
Benkelman	Dundy	2,968																		R. D. Druliner.
Bertrand	Phelps	2,515	5								0.20		0.20	2.0	1	21	9	1	nw.	W. F. Dobbin.
Blair	Washington	1,122	17	21.2	− 1.0	58	29	− 17	12	39	0.60	+ 0.17	0.18	12.2	6	23	3	5	nw.	D. C. Van Deusen.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Nebraska—Continued.																				
Blake	Garfield	.....	1	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	1.0	1	15	14	2	nw.	H. C. Mead.
Bloomfield	Knox	.....	8	20.2	.....	59	29	− 17	8	47	0.23	.....	0.20	2.3	3	15	13	3	nw.	Dr. L. C. Bleick.
Bradshaw	York	1,715	15	.....	.....	.....	.....	.....	.....	.....	0.54	+ 0.12	0.30	5.2	4	9	21	1	.....	E. C. Roggy.
Brewster	Blaine	.....	1	.....	.....	.....	.....	.....	.....	.....	0.08	.....	0.02	.....	4	17	9	5	nw.	W. S. Turnbull.
Bridgeport	Morrill	3,658	16	26.5	+ 1.0	60	29	− 26	7	50	0.25	− 0.19	0.10	2.5	3	20	9	2	nw.	R. H. Willis.
Broken Bow	Custer	2,477	19	20.4	− 4.2	67	28	− 12	5	53[b]	0.07	− 0.20	0.07	2.0	1	20	3	8	n.	R. V. McCall.
Bruning	Thayer	1,583	2	.....	.....	.....	.....	.....	.....	.....	0.36	.....	0.26	3.7	5	13	14	4	nw.	Henry Middendorf.
Burge	Cherry	2,674	7	23.2	.....	57	15†	− 23	6	57	T.	.....	T.	T.	0	20	5	6	nw.	H. A. Davis.
Burwell	Garfield	2,180	20	.....	.....	.....	.....	.....	.....	.....	0.15	− 0.33	0.15	0.8	1	.....	.....	.....	.....	W. L. McMullen.
Butte	Boyd	.....	7	22.0	.....	64	29	− 22	6	53	0.35	.....	0.25	3.5	2	17	13	1	nw.	W. Whitla.
Cairo	Hall	1,951	4	.....	.....	.....	.....	.....	.....	.....	0.25	.....	0.15	2.5	2	.....	.....	.....	.....	Elliott Harrison.
Callaway	Custer	2,555	21	24.9	0.0	65	29	− 19	8	50[b]	0.15	− 0.20	0.15	2.0	1	18	6	7	s.	J. H. Evans.
Cambridge	Furnas	2,258	6	25.1	.....	66	29	− 14	8†	46	0.40	.....	0.20	4.0	2	20	4	7	nw.	Chas. Jensen.
Columbus	Platte	1,442	20	21.0	− 1.5	62	16†	− 20	8	62	0.25	− 0.12	0.10	2.5	3	18	6	7	nw.	A. L. Rush.
Crete	Saline	1,368	30	23.6	+ 1.7	62	29	− 17	7	38	0.49	− 0.08	0.31	5.5	3	13	7	11	n.	Doane College.
Culbertson	Hitchcock	2,565	25	26.1	.....	66	29	− 10	6†	45	0.05	− 0.28	0.05	1.0	1	18	4	9	w.	Homer L. Nye.
Curly	Sioux	.....	3	23.0[c]	.....	53	14†	− 30	6†	50[d]	0.32	.....	0.12	5.0	3	10	16	5	w.	A. E. Hann.
Curtis	Frontier	2,553	15	26.2	− 0.4	69	29	− 15	8	46	0.06	− 0.36	0.02	0.6	3	25	2	4	nw.	Dr. S. R. Razee.
David City	Butler	1,619	24	23.0	+ 1.4	60	29	− 14	12	37	0.84	+ 0.08	0.60	8.4	5	11	8	12	nw.	S. Clingman.
Du Bois	Pawnee	1,074	8	.....	.....	.....	.....	.....	.....	.....	0.76	.....	0.70	7.5	3	16	6	9	nw.	O. M. Backus.
Dumas	Garfield	.....	4	22.2	.....	60	29	− 19	12	43	0.15	.....	0.15	1.5	1	15	10	6	n.	Emile Raes.
Elm Creek	Buffalo	2,268	5	.....	.....	.....	.....	.....	.....	.....	0.17	.....	0.17	.....	1	.....	.....	.....	.....	E. L. Sutton.
Elsie	Perkins	3,382	5	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	2.0	1	.....	.....	.....	.....	J. F. Brittain.
Ericson (near)	Garfield	2,029	21	.....	.....	.....	.....	.....	.....	.....	0.10	− 0.40	0.10	2.0	1	17	13	1	nw.	J. A. Bodyfield.
Ewing	Holt	1,888	21	21.1	.....	73	29	− 18	8	48	0.10	− 0.31	0.10	1.0	1	.....	.....	.....	.....	G. H. Benson.
Exeter	Fillmore	1,607	1	.....	.....	.....	.....	.....	.....	.....	0.40	.....	0.40	4.0	1	.....	.....	.....	.....	Frank Ainsworth.
Fairbury	Jefferson	1,316	37	24.0	− 1.6	64	29	− 21	8	43	0.43	− 0.28	0.30	4.8	3	17	9	5	nw.	W. F. Cramb.
Fairmont	Fillmore	1,641	20	20.2	− 3.1	63	29	− 20	8	42	0.52	− 0.07	0.25	5.2	4	12	13	6	s.	C., B. & Q. R. R. Co.
Falls City	Richardson	898	19	27.9	− 0.3	61	25†	− 11	8	41	0.10	− 0.58	0.09	1.0	2	14	11	6	nw.	Dr. J. C. Yutzy.
Fort Robinson	Dawes	3,764	30	21.6	− 1.5	59	29	− 25	6	62	0.27	− 0.37	0.10	.....	3	12	7	12	sw.	Post surgeon.
Franklin	Franklin	1,820	25	24.6	0.0	68	29	− 25	8	46	0.10	− 0.27	0.10	1.0	1	14	12	5	nw.	A. R. Peck.
Fremont	Dodge	1,203	32	21.0	+ 1.7	60	29	− 18	8	38	1.15	+ 0.29	0.80	11.5	3	14	9	8	se.	Ernest Hahn.
Fullerton	Nance	1,629	12	21.0	.....	62	29	− 19	8	38[a]	0.30	− 0.41	0.20	3.0	2	19	9	3	nw.	Dr. F. W. Johnson.
Geneva	Fillmore	1,633	22	24.5	+ 0.2	63	29	− 17	8	38	0.63	+ 0.20	0.30	6.1	5	14	8	9	nw.	F. M. Flory.
Genoa	Nance	1,584	38	22.8	+ 3.2	62	25†	− 17	8	40	0.25	− 0.40	0.08	2.5	4	19	7	5	nw.	F. W. Parsons.
Gordon	Sheridan	3,550	13	20.5	.....	61	29	− 29	6	51[b]	0.40	− 0.15	0.30	3.0	2	13	14	4	nw.	G. F. Williams.
Gosper	Gosper	.....	10	.....	.....	.....	.....	.....	.....	.....	0.20	− 0.06	0.20	2.0	1	17	11	3	w.	E. H. Stoll.
Gothenburg	Dawson	2,557	19	24.8	− 0.2	66	29	− 15	8	59	0.30	− 0.12	0.20	3.0	2	18	4	9	nw.	Dr. W. J. Bartholomew.
Grand Island	Hall	1,860	22	23.8	− 0.6	62	29	− 10	6†	33	0.41	− 0.08	0.33	4.0	2	16	1	14	n.	E. A. Barnes.
Grant	Perkins	3,405	10	24.5	.....	64	29	− 20	6†	45	0.07	− 0.13	0.05	0.7	2	20	6	5	nw.	Anson K. Holmes.
Greeley	Greeley	2,021	18	23.2	.....	58	25	− 10	12†	37	0.40	− 0.04	0.25	3.9	7	14	15	2	nw.	W. E. Morgan.
Guide Rock	Webster	1,646	13	.....	.....	.....	.....	.....	.....	.....	0.45	− 0.01	0.30	4.5	2	12	8	11	n.	J. S. Marsh.
Haigler	Dundy	3,258	19	.....	.....	.....	.....	.....	.....	.....	0.45	+ 0.27	0.40	4.5	2	.....	.....	.....	.....	J. L. Pember.
Halsey	Thomas	2,695	10	24.2	+ 1.0	62	29	− 17	6	52	0.09	− 0.28	0.03	2.0	4	22	6	3	sw.	Bureau of Forestry.
Hartington	Cedar	1,309	22	20.3	+ 2.1	60	28	− 14	12	53	0.07	− 0.64	0.05	0.7	2	16	7	8	nw.	D. E. Ewing.
Harvard	Clay	1,812	24	23.2	− 0.4	61	29	− 16	8	36	0.51	+ 0.07	0.20	7.0	3	11	5	15	nw.	Bert Gregg.
Hastings	Adams	1,932	22	22.4	− 1.6	63	29	− 16	8	41	0.47	+ 0.02	0.20	4.5	5	24	2	5	nw.	C. B. & Q. R. R. Co.
Hayes Center	Hayes	.....	20	25.0	.....	65	29	− 13	6	43	0.65	+ 0.20	0.40	6.5	5	20	8	3	w.	C. A. Ready.
Hay Springs	Sheridan	3,821	28	22.8	+ 2.3	57	29	− 26	7	61	0.55	− 0.09	0.20	4.5	4	11	15	5	sw.	A. Kadlecek.
Hebron	Thayer	1,458	28	24.8	+ 1.0	65	29	− 25	8	40	0.40	− 0.28	0.30	4.0	2	.....	.....	.....	.....	Dr. C. M. Easton.
Hemingford	Boxbutte	4,256	4	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.02	.....	4	.....	.....	.....	.....	A. S. Enyeart.
Hendley	Furnas	2,231	9	.....	.....	.....	.....	.....	.....	.....	0.40	.....	0.40	4.0	1	.....	.....	.....	.....	T. L. Jones.
Hershey	Lincoln	2,902	2	.....	.....	.....	.....	.....	.....	.....	0.07	.....	0.05	.....	2	19	6	6	.....	G. F. Palmer.
Hillside	McPherson	3,484	4	24.0	.....	63	29	− 22	7	56	0.12	.....	0.10	3.3	3	14	9	8	nw.	Mrs. M. R. Lloyd.
Holdrege	Phelps	2,324	23	24.0	− 1.7	65	29	− 12	8	41	0.25	− 0.18	0.20	2.5	2	12	10	9	nw.	C. B. & Q. R. R. Co.
Hooper	Dodge	1,228	15	21.0	− 0.7	60	25†	− 21	8	35	0.80	+ 0.40	0.40	8.0	3	8	2	21	nw.	Dr. W. H. Heine.
Hull (near)	Banner	.....	2	.....	.....	.....	.....	.....	.....	.....	0.14	.....	0.14	2.0	1	21	2	8	w.	Mrs. W. P. Miller.
Imperial	Chase	3,278	21	26.0	− 0.6	65	29	− 16	6†	40	0.15	− 0.30	0.10	1.5	2	12	7	12	nw.	Robt. Malcolm.
Kearney	Buffalo	2,146	24	24.8	− 0.7	63	29	− 15	8	41	0.30	− 0.14	0.20	3.0	2	15	13	3	sw.	City engineer.
Kimball	Kimball	4,697	24	24.3	− 2.9	58	29	− 26	5	48	0.20	− 0.23	0.10	2.0	2	19	10	2	w.	F. J. Bellows.
Kirkwood	Rock	.....	18	23.4	+ 1.8	64	29	− 21	6	56	0.30	− 0.20	0.20	3.0	3	16	11	4	nw.	Mrs. C. Arter.
Kowanda	Garden	.....	4	.....	.....	.....	.....	.....	.....	.....	0.24	.....	0.20	.....	2	.....	.....	.....	.....	Geo. W. Hulse.
Lexington	Dawson	2,385	24	24.0	− 0.9	61	25	− 10	6†	43	.....	.....	.....	.....	.....	22	0	9	n.	Robt. Chadwick.
Lincoln	Lancaster	1,189	32	24.0	+ 2.8	63	29	− 11	12	37	0.31	− 0.31	0.17	4.5	5	14	6	11	s.	U. S. Weather Bureau.
Lodgepole	Cheyenne	3,820	14	26.8	+ 1.2	62	29	− 23	6	48	0.10	− 0.30	0.10	1.0	1	21	7	3	w.	R. T. Kidney.
Loup City	Sherman	2,067	19	21.9	− 1.7	61	29	− 20	8	42	0.15	− 0.07	0.15	1.5	1	25	5	1	n.	Harriet Hayhurst.
McCook	Redwillow	2,506	19	27.6	+ 0.3	66	29	− 15	9†	53	0.00	− 0.22	0.00	0.0	0	24	5	2	nw.	C. G. Coglizer.
McCool Junction	York	1,575	15	.....	.....	.....	.....	.....	.....	.....	0.60	+ 0.18	0.60	6.0	1	.....	.....	.....	.....	L. L. Slagel.
Madison	Madison	1,585	20	18.8[c]	− 2.9	60	25	− 19	8	34[c]	0.40	− 0.11	0.20	4.0	3	22	1	8	nw.	Dr. F. A. Long.
Marquette	Hamilton	1,830	33	.....	.....	.....	.....	.....	.....	.....	0.20	− 0.35	0.10	2.0	2	.....	.....	.....	.....	John Ellis.
Mary	Brown	.....	2	.....	.....	.....	.....	.....	.....	.....	0.09	.....	0.05	1.0	3	17	8	6	w.	G. C. Stufft.
Mason City	Custer	2,257	13	.....	.....	.....	.....	.....	.....	.....	0.45	+ 0.01	0.30	.....	4	.....	.....	.....	.....	J. A. Amsberry.
Minatare	Scotts Bluff	3,825	3	.....	.....	.....	.....	.....	.....	.....	0.75	.....	0.50	0.7	2	29	0	2	nw.	A. Kennedy.
Minden	Kearney	2,169	36	24.3	+ 1.9	65	30	− 13	8	39	0.23	− 0.54	0.18	3.1	4	14	10	7	n.	Joel Hull.
Mitchell	Scotts Bluff	3,950	4	25.6	.....	57	14†	− 30	7	50	0.08	.....	0.03	0.7	4	11	12	8	w.	U. S. Reclamation Service.
Nebraska City	Otoe	941	35	26.4	+ 5.6	60	16	− 19	8	34	0.75	− 0.02	0.70	7.5	2	12	11	8	n.	C. B. & Q. R. R. Co.
Nelson	Nuckolls	1,683	2	24.4	.....	68	29	− 25	8	42	0.30	.....	0.30	3.0	1	21	2	8	nw.	Mack I. Koser.
Norfolk	Madison	1,532	28	20.2	+ 1.4	64	29	− 20	8	41	0.22	−0.20	0.18	2.5	2	21	6	4	s.	Dr. P. H. Salter.
North Loup	Valley	1,961	24	23.7	+ 1.8	68	29	− 19	8	48	0.17	− 0.39	0.15	1.7	2	17	12	2	n.	W. G. Rood.
North Platte	Lincoln	2,841	39	23.7	+ 2.3	65	29	− 14	6	44	0.16	− 0.31	0.16	1.6	2	12	16	3	w.	U. S. Weather Bureau.
Oakdale	Antelope	1,722	25	17.8	− 0.6	59	25†	− 20	8	38	0.20	− 0.25	0.10	2.0	4	13	10	8	nw.	G. S. Clingman.
Omaha	Douglas	1,103	43	23.8	+ 3.3	59	29	− 6	12	33	0.69	+ 0.04	0.32	7.7	6	15	8	8	s.	U. S. Weather Bureau.
O'Neill	Holt	1,975	15	.....	.....	.....	.....	.....	.....	.....	0.05	− 0.35	0.05	1.0	1	24	1	6	nw.	L. E. Best.
Ord	Valley	2,062	18	.....	.....	.....	.....	.....	.....	.....	0.30	− 0.06	0.30	3.0	1	13	15	3	nw.	Jas. Milford.
Orleans	Harlan	1,993	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jas. McGeachin.
Osceola	Polk	1,644	16	24.2	.....	63	29	− 20	8	37	0.60	+ 0.23	0.40	6.0	2	12	15	4	nw.	G. T. Ray.
Palisade	Hitchcock	.....	3	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	2.0	1	.....	.....	.....	.....	E. E. Young.
Palmyra**	Otoe	1,142	14	23.4	− 0.8	60	25†	− 14	8	.....	.....	.....	.....	.....	.....	19	9	3	n.	Thos. Coles.
Pawnee City	Pawnee	1,175	17	25.3	+ 0.8	60	25	− 25	8	48	0.40	− 0.38	0.20	4.0	2	23	3	5	nw.	F. A. Barton.
Paxton	Keith	3,060	4	23.9	.....	64	29	− 18	7	44	0.25	.....	0.20	2.5	2	19	3	9	w.	C. F. Coy.
Plymouth	Jefferson	1,419	9	22.2	.....	62	29	− 16	8	43	0.18	.....	0.09	1.8	3	11	9	11	n.	Dora Ruppel.
Purdum	Blaine	.....	11	22.8	+ 0.6	63	29	− 19	6†	53	0.10	− 0.40	0.05	1.0	3	19	9	3	sw.	T. C. Jackson.
Ravenna	Buffalo	2,028	36	23.4	− 0.3	63	29	− 20	8	43	0.30	− 0.31	0.20	3.5	3	21	8	2	sw.	H. G. Smith.
Red Cloud	Webster	1,687	21	25.2	− 0.6	69	29	− 22	8	51	0.31	0.00	0.14	5.0	3	18	3	10	nw.	Chas. S. Ludlow.
St. Libory	Howard	1,887	18	.....	.....	.....	.....	.....	.....	.....	0.60	+ 0.10	0.30	6.0	4	16	11	4	nw.	W. I. Meader.
St Paul	....do	1,796	18	23.3	− 1.8	63	29	− 16	8	38	0.09	− 0.28	0.05	1.0	2	19	9	3	nw.	Paul Anderson.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Nebraska—Continued.																				
Santee	Knox																			A. M. MacGregor.
Schuyler	Colfax	1,357	19	20.5	.....	63	29	− 27	8	44	0.49	+ 0.04	0.23	4.9	3	12	10	9	nw.	R. O. Brownell.
Scottsbluff	Scotts Bluff	3,888	24	27.8	+ 2.0	60	29	− 29	7	51	0.20	− 0.27	0.07	1.9	4	20	8	3	w.	A. B. McCoskey.
Seward	Seward	1,435	23	22.6	− 1.6	62	29	− 21	8	36	0.50	− 0.03	0.42	5.0	2	20	5	6	.....	C. B. & Q. R. R. Co.
Sidney	Cheyenne	4,090	22	.....	.....	.....	.....	.....	.....	.....	0.35	− 0.14	0.10	3.0	4	27	0	4	nw.	John P. Fischer.
Springfield	Sarpy	1,052	1	.....	.....	.....	.....	.....	.....	.....	0.70	.....	0.35	4.0	4	18	5	8	nw.	L. A. Bates.
Springview	Keyapaha	.....	19	23.5	+ 2.6	61	29	− 20	6	53	0.20	− 0.29	0.20	2.0	1	12	12	7	nw.	C. L. Phelps.
Stanton	Stanton	1,472	21	17.0	− 2.8	60	25†	− 23	8	64	0.50	0.00	0.20	5.0	3	20	11	0	nw.	Alfred Pont.
Stratton	Hitchcock	2,804	17	.....	.....	.....	.....	.....	.....	.....	0.30	+ 0.03	0.30	3.0	1	.....	.....	.....	.....	Miss Stella Vennum.
Superior	Nuckolls	1,574	26	.....	.....	.....	.....	.....	.....	.....	0.40	− 0.10	0.40	4.0	1	.....	.....	.....	.....	F. V. Bishop.
Syracuse	Otoe	1,059	20	24.1	+ 0.5	60	25†	− 20	8	43	1.12	+ 0.36	0.70	10.0	6	15	6	10	se.	W. N. Hunter.
Table Rock	Pawnee	1,023	24	.....	.....	.....	.....	.....	.....	.....	0.82	+ 0.25	0.50	6.5	6	19	7	5	nw.	E. D. Howe.
Tecumseh	Johnson	1,113	32	.....	.....	.....	.....	.....	.....	.....	0.72	− 0.12	0.30	6.0	5	15	9	7	.....	L. E. Pratt.
Tekamah	Burt	1,060	22	20.8	− 0.6	58	25†	− 18	8	40	0.70	− 0.02	0.30	7.0	3	12	12	7	nw.	Dr. A. D. Nesbit.
University Farm	Lancaster	.....	24	24.9	0.0	63	29	− 17	8	38	0.33	− 0.17	0.27	4.0	2	14	8	9	.....	S. W. Perin.
Valentine	Cherry	2,613	24	21.0	+ 2.8	58	29	− 19	6	49	0.15	− 0.37	0.05	1.4	6	13	7	11	nw.	U. S. Weather Bureau.
Wahoo	Saunders	1,187	10	.....	.....	.....	.....	.....	.....	.....	0.80	+ 0.18	0.30	8.0	4	20	6	5	sw.	W. T. Mauck.
Wakefield	Dixon	1,387	19	20.3	+ 0.1	59	25†	− 19	8	41	0.29	− 0.25	0.20	2.9	3	19	6	6	s.	I. H. Weaver.
Walthill	Thurston	.....	11	18.3	.....	59	25	− 18	8	40	0.60	+ 0.29	0.40	6.0	2	.....	.....	.....	.....	G. A. Dudley.
Watertown	Buffalo	2,299	7	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.30	3.0	1	20	10	1	n.	R. E. Swift.
Wauneta	Chase	2,935	13	.....	.....	.....	.....	.....	.....	.....	0.35	+ 0.11	0.30	3.5	2	.....	.....	.....	.....	C. D. Fuller.
Weeping Water	Cass	1,080	34	23.7	.....	61	25	− 25	8	46	0.42	− 0.48	0.18	5.2	4	17	3	11	nw.	S. W. Orton.
Westpoint	Cuming	1,313	15	21.6	0.0	60	25	− 19	8	37	.....	.....	.....	.....	.....	25	1	5	n.	J. C. Elliott.
Wisner	....do	1,380	16	.....	.....	.....	.....	.....	.....	.....	0.28	− 0.33	0.20	.....	3	27	2	2	.....	.....
York	York	1,633	25	24.2	− 0.5	64	29	− 19	8	36	0.65	+ 0.13	0.40	6.5	3	14	11	6	nw.	A. T. Glauque.
Iowa.																				
Afton	Union	1,212	19	24.2	+ 1.5	53	29	− 11	12	35	1.23	+ 0.34	0.50	8.5	4	6	12	13	sw.	N. W. Rowell.
Allerton	Wayne	.....	11	25.4	+ 3.5	54	29	− 12	12	39	1.03	− 0.39	0.20	8.0	6	17	8	6	n.	Maude Chase.
Alton	Sioux	1,305	8	18.0	.....	53	25	− 16	8	41	0.20	.....	0.10	2.0	3	23	6	2	sw.	W. S. Slagle.
Atlantic	Cass	1,164	22	21.8	+ 1.4	53	29	− 16	12	36	0.89	+ 0.13	0.31	7.6	6	11	8	12	sw.	Thos. H. Whitney.
Audubon	Audubon	1,301	19	21.3	+ 2.4	52	29	− 13	8†	35	0.93	+ 0.28	0.61	9.3	3	13	7	11	sw.	Geo. E. Kellogg.
Bedford	Taylor	.....	13	23.6	− 0.2	62	25	− 18	12	45	0.83	− 0.27	0.50	7.7	6	17	6	8	nw.	E. E. Healy.
Centerville	Appanoose	1,013	3	26.1	.....	56	17	− 10	12	38	0.99	.....	0.40	9.5	6	22	6	3	sw.	Gordon Peacock, jr.
Chariton	Lucas	1,042	18	23.5	− 0.2	54	29	− 14	12	38	0.65	− 0.67	0.35	6.0	2	19	10	2	s.	C. C. Burr.
Clarinda	Page	1,069	23	20.4	− 2.1	56	29	− 15	12†	46	1.15	+ 0.17	0.35	10.3	7	15	10	6	s.	A. S. Van Sandt.
Corning	Adams	1,117	21	21.2	− 0.7	53	17†	− 23	8	48	1.38	+ 0.47	1.00	12.0	3	18	1	12	sw.	Jerome Smith.
Corydon	Wayne	1,101	20	25.4	+ 2.1	55	29	− 13	12	36	0.79	− 0.70	0.20	10.0	5	9	14	8	sw.	May C. Miller.
Council Bluffs	Pottawattamie	990	3	24.2	.....	57	29	− 25	8	44	1.20	.....	0.40	12.0	5	.....	.....	.....	.....	B. W. Crossley.
Creston	Union	1,312	8	18.8	.....	56	29	− 13	12	43	0.80	.....	0.30	6.5	6	16	6	9	nw.	O. J. Colby.
Cumberland	Cass	.....	14	.....	.....	.....	.....	.....	.....	.....	0.90	+ 0.05	0.40	9.0	4	16	5	10	sw.	J. H. Reppert.
Denison	Crawford	1,180	19	20.0	− 0.3	54	29	− 20	8	37	0.50	− 0.74	0.20	5.0	3	20	4	7	n.	W. C. Van Ness.
Elliott	Montgomery	.....	8	23.2	.....	48	16†	− 18	8†	43	1.05	.....	.....	.....	.....	14	9	8	sw.	C. H. Westrope.
Greenfield	Adair	.....	21	21.8	+ 0.5	55	29	− 13	12	37	1.18	+ 0.23	0.60	11.8	6	10	19	2	sw.	R. B. Oldham.
Harlan	Shelby	1,182	14	22.4	+ 1.2	54	29	− 18	12	35	0.64	− 0.02	0.21	6.0	4	.....	.....	.....	s.	C. A. Reynolds.
Inwood	Lyon	1,474	9	17.6	.....	58	29	− 17	12	51	0.11	.....	0.08	1.1	3	19	8	4	nw.	F. B. Hanson.
Lake Park	Dickinson	1,479	....	18.0	.....	53	25†	− 15	31	44	.....	.....	.....	1.0	1	26	0	5	s.	A. E. Woodruff.
Lamoni	Decatur	1,120	6	24.9	.....	55	16	− 10	12	36	0.54	.....	0.30	1.0	3	20	0	11	n.	T. J. Fitzpatrick.
Larrabee	Cherokee	1,266	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. C. Carnahan.
Le Mars	Plymouth	1,224	17	19.6	+ 0.4	54	25	− 13	12	40	0.04	− 0.50	0.02	0.4	3	7	16	8	nw.	G. A. C. Clarke.
Lenox	Taylor	1,250	18	23.3	0.0	52	16†	− 11	12	37	0.83	+ 0.07	0.60	8.3	6	19	7	5	nw.	J. L. Hurley.
Leon	Decatur	1,120	11	24.4	+ 2.2	54	16	− 12	12	35	0.68	− 0.20	0.30	6.0	4	10	6	15	nw.	Morris Gardner.
Little Sioux	Harrison	.....	8	21.7	.....	59	25	− 18	8†	39	0.84	.....	0.47	8.4	3	19	3	9	nw.	Geo. H. Gibson.
Logan	....do	928	46	21.1	+ 1.8	55	29	− 18	8	38	0.78	− 0.32	0.40	7.5	5	12	13	6	nw.	Glenn H. Stern.
Mount Ayr	Ringgold	1,236	20	24.8	+ 1.5	52	16	− 12	12	36	0.55	− 0.69	0.27	3.0	4	16	9	6	s.	Alex. Maxwell.
Murray	Clarke	1,216	22	23.2	+ 1.8	56	29	− 13	12	38	0.63	− 0.31	0.32	6.9	5	7	16	8	n.	M. T. Ashley.
Northboro	Page	1,046	1	24.4	.....	55	29	− 15	12	41	0.37	.....	0.22	8.0	4	19	2	10	nw.	J. M. Darby.
Odebolt	Sac	1,356	16	20.0	− 0.4	55	25†	− 12	8†	38	0.22	− 0.19	0.10	3.2	3	23	5	3	.....	E. Starner.
Onawa	Monona	1,051	13	22.1	− 0.5	59	25	− 10	8	36	0.70	+ 0.04	0.40	7.0	3	19	10	2	nw.	C. G. Perkins.
Pacific Junction	Mills	960	14	22.4	− 0.9	54	25	− 20	8	41	0.65	+ 0.11	0.44	6.5	4	8	18	5	n.	H. H. McCartney.
Rock Rapids	Lyon	1,358	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. C. Wyckoff.
Sheldon	O'Brien	1,422	13	18.1	+ 0.5	54	25	− 15	12	48	0.06	− 0.53	0.06	0.8	1	.....	.....	.....	nw.	Geo. Aupperle.
Sibley	Osceola	1,212	20	14.0	− 0.9	54	25	− 15	12†	50	0.13	− 0.41	0.05	1.3	5	.....	.....	.....	sw.	H. G. Doolittle.
Sioux Center	Sioux	.....	14	17.9	0.0	60	29	− 14	31	42	0.25	− 0.23	0.10	2.5	4	17	8	6	s.	J. de Ruyter.
Sioux City	Woodbury	1,135	24	19.2	+ 3.6	58	25	− 12	31	35	0.21	− 0.34	0.10	2.2	5	15	13	3	nw.	U. S. Weather Bureau.
Spencer	Clay	.....	3	19.0	.....	53	25	− 16	12	45	0.25	.....	0.15	2.5	3	.....	.....	.....	.....	S. Gillespie.
Thurman	Fremont	.....	16	22.8	− 1.4	55	25	− 25	8	47	0.54	− 0.10	0.40	5.2	4	7	16	8	nw.	C. R. Paul.
Washta	Cherokee	1,157	15	19.0	− 1.0	58	25	− 20	8	46	0.15	− 0.33	0.10	1.5	2	16	10	5	s.	H. L. Felter.
Kansas.																				
Abilene	Dickinson	1,157	18	.....	.....	.....	.....	.....	.....	.....	0.14	− 0.58	0.12	6.9	2	14	11	6	s.	T. W. Sherman.
Agricultural College	Riley	1,100	55	26.9	+ 1.0	68	29	− 21	8	50	0.75	− 0.05	0.50	7.5	4	14	9	8	sw.	Prof. J. O. Hamilton.
Alton	Osborne	1,651	11	27.0	.....	69	29	− 24	8	47	0.25	− 0.55	0.15	2.5	3	19	6	6	n.	H. A. Storer.
Atchison	Atchison	973	22	30.0	+ 2.4	61	29	− 5	12	40	0.47	− 0.66	0.40	3.0	4	18	7	6	n.	Prof. E. M. Stahl.
Beloit	Mitchell	1,383	18	25.7	.....	70	29	− 27	8	45	0.17	− 0.24	0.14	4.8	3	17	8	6	nw.	F. A. Slack.
Blakeman	Rawlins	2,894	16	25.8	.....	69	29	− 16	8	51	0.35	+ 0.09	0.32	4.5	2	18	7	6	nw.	C. L. Henderson.
Blue Rapids	Marshall	1,105	7	.....	.....	.....	.....	.....	.....	.....	0.75	.....	0.40	8.5	2	17	0	14	.....	M. Norton.
Centralia	Nemaha	1,256	4	25.2	.....	64	29	− 23	8	43	0.90	.....	0.80	9.0	2	15	8	8	ne.	N. S. Hazen.
Chapman	Dickinson	1,113	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. F. Halbert.
Clay Center	Clay	1,203	12	26.9	+ 0.2	67	29	− 23	8	45	0.50	− 0.03	0.30	5.0	2	16	4	11	n.	O. L. Slade.
Colby	Thomas	3,138	22	27.8	− 1.1	67	29	− 9	6†	44	0.65	+ 0.43	0.30	3.0	5	16	9	6	nw.	G. H. Kinkel.
Concordia	Cloud	1,398	29	27.0	+ 2.6	68	29	− 13	8	37	0.55	− 0.17	0.44	5.5	3	7	14	10	s.	U. S. Weather Bureau.
Densmore	Norton	2,200	4	27.0	.....	69	29	− 7	6†	41	0.10	.....	0.05	0.8	3	9	8	14	nw.	Miss Irene Vaughn.
Dresden	Decatur	2,731	19	27.9	− 1.5	69	29	− 9	8	41	0.35	+ 0.04	0.25	3.0	3	13	9	9	nw.	Jacob Bock.
Ellsworth	Ellsworth	1,537	9	29.2	.....	72	29	− 30	8	50	0.61	.....	0.35	4.2	3	9	13	9	s.	Geo. Seitz.
Emmett	Pottawatomie	1,024	1	.....	.....	.....	.....	.....	.....	.....	0.45	.....	0.26	4.5	2	19	5	7	n.	Frank Zina.
Enterprise	Dickinson	1,144	11	30.2	.....	68	29	− 20	8	39	0.27	− 0.45	0.18	.....	3	22[a]	0[a]	8[a]	nw.	Karl G. Erick.
Eskridge	Wabaunsee	1,412	7	28.0	.....	63	29	− 6	8	37	0.39	.....	0.16	4.8	5	16	10	5	s.	Geo. D. West.
Farnsworth	Lane	2,850	12	27.9	− 3.0	71	29	− 16	8	54	0.23	+ 0.03	0.18	2.5	3	22	3	6	sw.	C. M. Jennison.
Ft. Scott	Bourbon	857	38	34.0	+ 1.1	67	19	− 2	8	48	1.54	− 0.42	0.60	1.0	7	25	0	6	sw.	E. A. Shaver.
Frankfort	Marshall	1,146	19	26.0	− 2.4	63	29	− 27	8	42	0.60	− 0.08	0.60	6.0	1	18	9	4	sw.	W. W. Watson.
Garnet	Anderson	950	7	30.3	.....	58	3†	− 6	8	42	0.98	.....	0.36	1.5	4	13	10	8	s.	D. D. Judy.
Goodland	Sherman	3,687	6	27.6	.....	67	29	− 16	7	44	0.50	.....	0.20	5.0	3	21	5	5	s.	C. C. Calvert.
Hanover	Washington	1,225	16	27.0	− 0.2	64	29	− 20	8	40	0.20	− 0.37	0.20	2.8	1	16	8	7	s.	A. Jaedicke, jr.
Harrison	Jewell	1,804	12	24.6	− 1.1	67	29	− 30	8	45	0.78	+ 0.30	0.65	8.5	3	18	7	6	s.	Mahlon Tegley.

TABLE 1.—*Climatological data for January, 1913. District No. 6*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Kansas—Continued.																			
Hays	Ellis	2,000	45	26.4	− 3.7	70	29	− 21	8	45	0.36	− 0.25	0.36	4.0	1	15	11	5	ne.	G. K. Helder.
Hill City	Graham	2,134	5	29.3	.....	70	29	− 12	8	48	0.20	.....	0.10	2.0	2	13	14	4	s.	C. A. G. Inlow.
Horton	Brown	1,188	24	26.6	− 0.5	61	25†	− 10	8	39	0.59	− 0.39	0.36	7.0	3	14	9	8	nw.	Mrs. S. C. Belden.
Hoxie	Sheridan	2,700	14	28.7	− 1.0	68	29	− 9	8	44	0.30	0.00	0.20	3.0	2	13	11	7	nw.	I. L. Vinson.
Lawrence	Douglas	997	45	29.2	+ 2.6	62	29	− 7	8	40	0.45	− 0.79	0.21	3.9	3	17	7	7	sw.	Prof. H. P. Cady.
Leavenworth	Leavenworth	913	69	31.2	+ 5.8	61	29	− 4	6†	40	0.30	− 0.80	0.20	4.2	2	21	0	10	s.	Dr. A. F. Yohe.
Lebanon	Smith	1,812	15	24.6[d]	− 2.7	68[d]	29	− 19[d]	8	42[d]	0.40	0.00	0.40	4.0	1	24[d]	1[d]	2[d]	n.	E. V. Bower.
Leoti	Wichita	3,300	10	27.3	.....	66	29	− 12	8	53	0.04	.....	0.04	1.5	1	20	7	4	nw.	L. E. Gorsuch.
Lincoln	Lincoln	1,374	1	27.2	.....	72	29	− 24	8	48	0.35	.....	0.35	5.0	1	17	7	7	w.	R. W. Greene.
Lindsborg	McPherson	1,333	7	.....	.....	.....	.....	.....	.....	.....	0.34	.....	0.34	3.0	1	.....	.....	.....	n.	A. J. Fredrickson.
McCracken	Rush	2,139	1	29.2	.....	70	29	− 20	8	49	0.20	.....	0.10	2.0	2	14	11	6	sw.	E. D. Floyd.
Minneapolis	Ottawa	1,259	23	27.6	− 0.8	63	29	− 22	8	42	0.37	− 0.14	0.27	5.5	2	18	4	9	s.	J. L. Steele.
Moran	Allen	1,098	17	32.4	+ 0.7	66	19	− 7	8	38	0.98	− 0.23	0.41	2.2	6	15	6	10	sw.	C. J. Norton.
Natoma	Osborne	1,834	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. O. Hunt.
Norton	Norton	2,284	15	26.1	− 0.9	64	29	− 10	12	47	0.20	− 0.26	0.10	2.0	2	14	13	4	sw.	Sim Sieffel.
Oberlin	Decatur	2,539	26	.....	.....	.....	.....	.....	.....	.....	0.37	− 0.04	0.25	4.8	3	25	4	2	sw.	I. K. Huber.
Oketo	Marshall	1,194	5	24.6	.....	63	29	− 21	8	42	0.28	.....	0.14	3.0	3	10	12	9	nw.	J. A. Church.
Olathe	Johnson	1,032	18	29.4	− 0.4	59	29	− 9	8	41	0.63	− 0.43	0.28	3.0	5	12	12	7	s.	Dr. S. B. S. Wilson.
Oskaloosa	Jefferson	991	.....	.....	.....	.....	.....	.....	.....	.....	0.46	.....	0.25	5.0	2	24	7	0	nw.	Ralph Snyder.
Ottawa	Franklin	926	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. J. Sheldon.
Phillipsburg	Phillips	1,939	22	27.8	+ 0.8	71	29	− 17	8	48	0.20	− 0.34	0.10	2.0	2	22	6	3	nw.	N. E. Bailey.
Plainville	Rooks	2,156	7	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.10	2.0	3	21	6	4	sw.	P. D. Spellman.
Pleasanton	Linn	862	11	33.6	+ 2.2	63	19†	− 6	8	43	1.13	− 0.47	0.35	1.5	5	19	3	9	nw.	B. F. Blaker.
Quenemo	Osage	941	1	.....	.....	.....	.....	.....	.....	.....	0.60	.....	0.21	5.3	6	18	6	7	sw.	R. L. Graham.
Republic	Republic	1,495	10	25.9	.....	67	29	− 26	8	45	0.60	.....	0.40	6.0	3	.....	.....	.....	.....	J. W. Ambrose.
Russell	Russell	1,834	14	27.8	− 2.4	70	29	− 23	8	47	0.30	− 0.44	0.20	5.0	2	18	5	8	n.	Robert Brebner.
Russell Springs	Logan	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Murray Wallace.
St. Francis	Cheyenne	3,288	5	26.3	.....	68	29	− 15	8	52	0.23	.....	0.12	3.2	3	12	13	6	nw.	J. E. Uplinger.
Salina	Saline	1,227	29	28.6	− 0.6	69	29	− 28	8	44	0.61	− 0.14	0.40	6.0	3	13	12	6	s.	Prof. A. W. Jones.
Scott	Scott	2,971	7	29.2	.....	71	29	− 11	8	51	0.31	.....	0.31	2.0	1	23	2	6	s.	J. B. Loughran.
Smith Center	Smith	1,800	3	24.8	.....	70	29	− 24	8	49	0.17	.....	0.09	3.0	2	20	7	4	se.	W. H. Nelson.
Topeka	Shawnee	997	27	28.8	+ 3.2	65	29	− 5	8	39	0.50	− 0.43	0.36	5.3	4	13	13	5	s.	U. S. Weather Bureau.
Tribune	Greeley	3,612	14	27.6	.....	64	29	− 12	8	48	0.25	− 0.15	0.25	2.5	1	13	9	9	sw.	Charles E. Cassel.
Valley Falls	Jefferson	913	14	27.8	+ 0.1	62	29	− 14	8	45	0.49	− 0.35	0.32	5.6	5	19	8	4	nw.	Miss Nettie Maxwell.
Vinland	Douglas	880	4	.....	.....	.....	.....	.....	.....	.....	0.57	.....	0.32	4.2	5	.....	.....	.....	.....	A. Schick.
Wakeeney	Trego	2,456	30	29.1	− 0.1	70	29	− 12	8	45	0.11	− 0.47	0.08	2.0	2	22	3	6	s.	A. S. Peacock.
Wallace	Wallace	3,303	43	30.0	.....	70	29	− 8	6†	48	0.06	− 0.18	0.06	3.0	1	15	4	12	sw.	J. L. Page.
Wamego	Pottawatomie	1,002	20	29.1	.....	67	29	− 17	8	49	0.78	+ 0.05	0.70	7.0	2	12	8	11	n.	M. L. Stone.
Missouri.																				
Amoret	Bates	850	4	32.2	.....	63	19	− 3	8†	39	1.13	.....	0.30	T.	5	13	6	12	nw.	Darby Fruit Farm.
Appleton City	St. Clair	853	23	31.6	+ 0.1	66	18	1	8	37	1.75	− 0.54	0.59	1.5	6	10	14	7	n.	Robert Brown.
Arlington	Phelps	695	12	.....	.....	.....	.....	.....	.....	.....	4.58	+ 2.67	1.60	4.5	11	14	3	14	nw.	G. V. Randolph.
Arthur	Vernon	767	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. Armstrong.
Avalon	Livingston	.....	28	28.2	+ 0.8	58	16	− 8	12	38	0.60	− 1.35	0.30	4.0	5	20[a]	1[a]	9[a]	sw.	F. G. Ashbaugh.
Bethany	Harrison	881	24	26.4[e]	+ 1.7	55	16†	− 8	12	40	1.01	− 0.47	0.36	7.0	4	12[e]	8[e]	6[e]	se.	W. H. Skinner.
Bolivar	Polk	1,070	25	35.8	+ 1.4	68	19	4	12	42	2.66	+ 0.66	1.13	1.0	7	11	9	11	nw.	A. C. Fink.
Boonville	Cooper	600	37	.....	.....	.....	.....	.....	.....	.....	2.19	+ 0.19	0.45	0.2	10	15	0	16	nw.	C. Randecker.
Brunswick	Chariton	652	34	28.0	− 0.5	61	16	− 2	12	49	1.05	− 0.66	0.25	5.0	9	13	3	15	nw.	Louis Benecke.
Clinton	Henry	800	37	31.4	.....	66	19	1	21	52	1.31	− 0.73	0.65	0.8	4	14	9	8	se.	A. E. Derwent, M. D.
Columbia	Boone	784	24	31.1	+ 3.9	64	19	2	12	35	2.57	+ 0.34	0.75	T.	9	8	10	13	s.	U. S. Weather Bureau.
Conception	Nodaway	982	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Fr. Adhelm Hess.
Crocker	Pulaski	1,300	2	35.6	.....	70	19	5	12	45	3.45	.....	1.30	2.0	6	12	6	13	s.	Ira H. Stephens.
Eldon	Miller	...	1	33.4	.....	68	19	4	12	40	3.59	.....	1.46	0.9	9	7	14	10	nw.	Charles A. Kellogg.
Eldorado Springs	Cedar	750	7	35.2	.....	68	19	1	8	46	1.80	.....	0.88	1.0	5	12[b]	6[b]	11[b]	sw.	Samuel Graham.
Fayette	Howard	725	29	29.1	+ 1.2	62	16	− 2	12	35	1.91	− 0.23	0.40	1.0	8	16	7	8	.....	Prof. T. B. Smith.
Fulton	Callaway	818	22	31.6	+ 1.2	66	19	1	20	60	3.31	+ 0.72	1.52	0.0	5	12[b]	7[b]	10[b]	w.	Russel Johnston.
Glasgow	Howard	618	35	.....	.....	.....	.....	.....	.....	.....	0.87	− 0.86	0.26	8.0	7	16	1	14	s.	J. J. Shaughnessy.
Grant City	Worth	1,130	21	25.6	+ 1.6	55	16†	− 10	12	39	0.97	+ 0.01	0.40	6.0	3	15[a]	4[a]	11[a]	nw.	W. H. Campbell.
Harrisonville	Cass	912	41	29.3	+ 2.0	61	16	− 2	9	41	1.65	+ 0.08	0.50	2.8	7	12	5	14	sw.	A. J. Sharp.
Hazelhurst	Livingston	.....	20	.....	.....	.....	.....	.....	.....	.....	0.76	− 0.63	0.40	5.5	5	.....	.....	.....	.....	W. H. Baker.
Hermann	Gasconade	482	40	.....	.....	.....	.....	.....	.....	.....	3.55	+ 1.27	0.82	2.0	13	12	3	16	s.	C. T. Maushund.
Houston	Texas	1,280	21	35.3	+ 0.8	66	19	4	12	42	7.25	+ 5.07	1.50	2.0	11	9	8	14	s.	E. Dempsey.
Jefferson City	Cole	628	28	29.8	− 0.6	68	19	1	12	47	3.26	+ 0.91	0.90	2.2	10	17	0	14	n.	Miss Emma Swift.
Kansas City	Jackson	963	25	30.1	+ 3.9	60	29	− 2	12	36	0.65	− 0.48	0.32	4.1	9	11	11	9	s.	U. S. Weather Bureau.
Kidder	Caldwell	1,017	23	25.8	− 0.4	55	25	− 7	12	50	0.78	− 0.57	0.30	6.0	5	20	4	7	sw.	J. F. Sharp.
Lamonte	Pettis	863	25	32.4	.....	63	19	− 1	8	41	2.47	+ 0.67	0.75	2.0	6	12	10	9	s.	J. Ed. Hall.
Lebanon	Laclede	1,265	25	35.0	+ 1.4	67	19	4	12	50	4.06	+ 1.57	1.36	T.	7	13	6	12	s.	M. W. Serl.
Lexington	Lafayette	813	32	29.3	+ 1.8	61	16	− 2	12	40	0.82	− 0.75	0.20	3.0	7	18	0	13	s.	J. W. Keithley.
Liberty	Clay	864	25	31.2	+ 2.5	60	16†	− 3	12	38	0.36	− 1.05	0.31	2.6	2	19	8	4	nw.	W. C. Wilmott.
Lockwood	Dade	1,088	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. S. Crow.
Marshall	Saline	779	23	28.8	+ 0.6	61	16	− 1	8†	36	1.33	− 0.48	0.40	3.0	7	18	4	9	nw.	Prof. W. H. Black.
Maryville	Nodaway	1,160	23	22.8	+ 0.4	57	16	− 11	12†	47	0.69	− 0.49	0.30	6.0	4	21	0	10	s.	J. R. Brink.
Mount Vernon	Lawrence	1,480	35	33.5[e]	− 1.3	69	19	4	8	40	3.70	+ 1.50	2.30	1.0	6	14[f]	1[f]	10[f]	nw.	J. R. White & Son.
Nevada	Vernon	860	20	.....	.....	.....	.....	.....	.....	.....	0.74	− 0.88	0.28	T.	3	13	10	8	sw.	C. Jewell.
Oregon	Holt	1,113	58	27.2	+ 3.6	58	25	− 8	12	39	0.63	− 0.91	0.51	6.2	5	15	6	10	nw.	Tom Curry.
Pattonsburg	Daviess	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Burton.
Rolla	Phelps	1,139	32	34.8	+ 4.0	67	19	5	12	42	4.37	+ 2.06	1.82	2.0	10	14	3	14	nw.	Prof. P. J. Wilkins.
St. Charles	St. Charles	614	36	35.1	+ 3.9	69	19	5	11	36	4.92	+ 2.59	2.40	T.	6	9	6	16	nw.	L. C. Saeger.
St. Joseph	Buchanan	967	42	27.7	.....	60	29	− 4	12	39	0.55	− 0.52	0.27	6.0	6	11	12	8	nw.	U. S. Weather Bureau.
St. Louis (1)	St. Louis City	567	43	34.8	+ 3.9	64	19	7	12	43	4.34	+ 2.07	1.34	T.	12	9	7	15	s.	Do.
St. Louis (2)	do.	578	2	34.2	.....	63	19	7	12	37	4.89	.....	1.32	0.1	13	9	5	17	se.	St. Louis University.
Sublett	Adair	1,000	33	27.6	+ 1.2	61	19	− 9	14	36	0.70	− 1.03	0.40	7.0	4	8	18	5	nw.	Lewis Spriggs.
Tarkio	Atchison	.....	1	29.2	.....	74	2	− 11	12	52	0.68	.....	0.68	10.0	2	25	3	3	w.	Prof. M. H. Rees.
Trenton	Grundy	812	19	27.7	+ 1.2	56	16	− 6	12	34	0.67	− 0.79	0.23	5.0	5	13	6	12	s.	W. H. Estes.
Unionville	Putnam	1,072	21	22.7	− 0.6	55	16	− 12	13	45	1.30	− 0.76	0.60	10.7	5	22	0	9	s.	Geo. W. Davis.
Warrensburg	Johnson	883	35	33.4	+ 4.8	63	19	1	12	37	1.06	− 0.73	0.34	1.5	6	14	7	10	sw.	A. F. Smithson.
Warrenton	Warren	865	23	30.7	+ 1.2	63	19	3	12†	42	3.70	+ 1.09	0.95	0.0	14	6	8	17	s.	Prof. John H. Frick.
Warsaw	Benton	700	9	34.6	.....	70	19	4	9	42	2.59	.....	0.65	3.0	7	11	10	10	w.	J. R. Smith, M. D.
Wheatland	Hickory	920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. S. A. Jackson.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
‡ All temperature normals for Montana used in this table have been reduced to the 33-year period.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 6, Missouri Valley.*

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																
Arapahoe	Bighorn																															
Barnum	Powder																															
Basin	Bighorn					T.					T.																				.38	0.38
Bennett	North Platte																															
Big Creek Station	do					T.				.08		T.								.64							T.					0.72
Boyd	Cheyenne	.14	.03	.50	.13					T.							.07	.13								.04	.17	.18			.82	.19	2.40
Burns	South Platte	T.		.05	.15																									.15		T.	0.35
Casper	North Platte																															
Centennial	do	.20			.14	.10							.05	.09			.15	.20		T.				T.			.04			.01	.10	.02	1.10
Cheyenne	South Platte	T.			.22	.17					.01							.01		T.				T.			T.			.11	.03	T.	0.55
Chugwater	North Platte				.18	.18																					T.						0.36
Clark	Yellowstone		T.	.05	.25					.05	T.		T.	.04			T.		T.	.31			T.			.02				T.		.04	0.76
Cody	Bighorn				.02					T.			.02							.01												T.	0 05
Crazy Creek	Yellowstone	T.	.05	.20	T.				.07	.12		.06	.13				T.	.07	.10	.04	T.	.03	.25		.12	.07	T.			T.		.10	1.41
Dome Lake	Tongue		.05	.20	.15						.05						.05	.05		.10			.05								.10	.15	0.95
Douglas	North Platte		T.		.02	.04																		.06			.05					.05	0.22
Dubois	Bighorn	.05		.10						.10							.10	.05		.05			T.			T.						0.45
Eatons Ranch	Tongue	.04		.27	.10					.08	.08		.08							16												.10	0.91
Echeta	Powder				.25					T.				T.						.40						.45					.20	.30	1.60
Elk Mountain	North Platte		.15			.25					.13									.02				.08							.14	.15	0.92
Encampment	do		T.	T.	.01	T.					T.		T.					.03	T.	T.		.02			T.		T.		T.		.08	.01	0.15
Ervay	Powder																															
Fort Laramie	North Platte				.26																						T.					.07	0.33
Foxpark	do				.14																			.02		.20					.14	.20	0.70
Germania	Bighorn				.02					.01	.02									.10										T.		.15	0.30
Gillette	Powder																															
Horse Creek	Bighorn																															
Hunters Station	Powder			.09	.38				.11	.08	.09								.08	.23						T.				.10	.08		1.24
Hyattville	Bighorn																														.60	0.60
Jireh	Niobrara		.05		.50	.05								.05							T.			T.			.05				.05	.20	0.95
Kinnear	Bighorn			T.		.05									T.																		0.05
Kirtley	Niobrara					.27																											0.27
Kirwin	Bighorn																															
Knowles	Cheyenne	.07		.80	.05					.03								.04	.04							T.		.10			.03		1.16
Lagrange	North Platte				.15	.05																		.02			.05				.14		0.41
Lander	Bighorn	T.		.08	.03												T.		T.				.02									.36	0.49
Laramie	North Platte																																
Leo	do										.04														T.	T.						.13	0.17
Lolabama Ranch	Yellowstone																		.05	.10													0.15
Lovell	Bighorn				T.	.02				T.	.06									T.							T.					.45	0.53
Lusk	Niobrara				.08			.12																			.04						0.24
Manville	do				.30	.10							T.										T.									.20	0.60
Moorcroft	Cheyenne	.05		T.	.10						.02	T.	T.					.05		.01	.05					.05						.07	0.40
Moore	North Platte	T.			.11	.04	.02											T.		T.				.10							.08	.01	0.36
Newcastle	Cheyenne	T.	.08	T.	.48	T.					T.			T.			T.	T.		T.						T.		T.		T.	.12	.04	0.72
Pathfinder	North Platte				.03	.01																										.01	0.05
Pinebluff	South Platte					.36	T.																				T.				T.	.02	0.38
Pine Ridge	Cheyenne	T.		.15	.02					.02						.01	.01	.01	.04		.01										.02	.03	0.31
Powell	Bighorn				T.					.03	T.																				T.	.15	0.18
Rawlins	North Platte	T.			T.	.12					T.	T.	T.				T.	T.		.02				T.							T.	T.	0.14
Riverton	Bighorn																																
Rock River	North Platte			.10													T.							T.		T.					T.	T.	0.10
Rockypoint	Powder	T.	T.	.30	.10					T.	.08						.04	T.		.02						T.	.10	.08		T.	.08	.07	0.87
Saratoga	North Platte				.50																										.05		0.55
Seven Mile Creek	do				.50												.08		09													.10	0.77
Sheridan	Tongue	T.	T.	.52	.14					.02	.05		.04				T.		.37	.02			T.			.13	.06			.08	.08	.40	1.91
Shoshone Dam	Bighorn			.23						.04			.01						.08	T.			.01									.08	0.45
Soldiers Home	Powder																																
South Pass City	North Platte	T.	T.		.11	.11	T.			.11	.02		.06	.04	T.		.07	.08	.05	.04	.03	T.	T.	T.			T.			T.	.03	0.75
Sundance	Cheyenne	.22		.30	.22					.08	.15							.45								.15		.08		.15		.15	1.95
Thermopolis	Bighor				.03	.02					.01			.01										.02									0.09
Thornton	Cheyenne																																
Ulm	Tongue		T.		.20					T.	.02		T.				T.			.17			T.			T.	.12				.03	.21	0.75
Verona	do			.40									.01						.30				.01			.30						.30	1.32
Wheatland	North Platte		T.		.01	.36	T.											T.									T.				T.	T.	0.37
Wiants Ranch	do	T.									T.									.10				.08								.17	0.35
Woodrock	Tongue	T.	T.	1.00							T.			.16			.14			.12			T.			.17				.17	.75	2.51
Worland	Bighorn				.02	.02					T.			.02																		.15	0.21
Wyncote	North Platte				.03	.08																									T.	T.	0.11
Yellowstone Park	Yellowstone	.02	.07	.04				T.	.11	.18		.08	.22	.06	.02	.04	.19	.14	.60	.02	.04	.02	.06	T.	.02	.03				.20	.01	.43	2.60
Fairview Dome	do		.08	.08					.32				.40	.08									.16	.32							.18	.48	2.10
Fountain	Madison	.16	.16						.40	.32		.64	.16	.16	.40	.48	.56	.08	.32	.08													3.92
Gallatin	Gallatin		.16						.24					.16		.32	.40								.32							.32	1.92
Grand Canyon	Yellowstone																																
Lake Yellowstone	do		.32	.10	.11				.21	.50	.09	.10	.15	.17	.33	.48	.34	.30	.12	.21		.08	.17										3.78
Norris	Madison		.08	T.		.08			.16	.08		.12	T.	T.	.08			.08			T.	.24	.40	.08	.32							.24	1.96
Riverside	do		.10	.10					.30	.40	.20		.15	.15	.30	.05			.64		.24	.04		.15									2.82
Sylvan Pass	Bighorn																																
Thumb	Yellowstone																																
Tower Falls	do		.30					T.	.38	.20			.08	.10					.28	.08		.08	.08		.18					.18		.15	2.69
Upper Geyser Basin	Madison	.35								.70						2.60																	3.65
Montana.																																
Adel	Missouri	.20		.60	.20				T.	.05			.30		.05	.10	.20		.30				T.	T.		T.				.05	.10	.40	2.55
Agricultural College	Gallatin				.02					.10	.01		.09				T.		.25				.01									.30	0.78
Augusta	Missouri			1.30									.30						.20														1.80
Babb	St. Marys	.01	.08			.14		.06	.08		.03			.18		.11	.15	.12	.10							.01			.16	.06	.14		1.43
Bald Butte	Missouri		.35	1.00	.21			T.	.14	.05	.09	.37	.45	T.	.13		T.	.20	.40	T.	.10	.20		T.	.20	.18				.11	T.	.20	4.38
Bigtimber	Yellowstone									.20																							0.20
Billings	do			.06	.08					.02			.03					T.		.10	.10					T.						.04	0.43
Birch Creek	Marias																																
Blackleaf	Missouri	.02		.12							T.	.01	.02						.04											04			0.25
Boulder Nursery	Jefferson	.07	T.	.10	.10				.04	.05		T.	.08	T.			.10	T.	.04	.04			T.		.04	.02				06		.27	1.01
Bowen	do																		.03														
Bridger	Yellowstone			T.	.06					.04										.06			T.									.13	0.29
Broadview	do			.13							.08		.01				T.		.01													.05	0.28
Browning	Marias	.01		.08				.06			.04		.02							.04													0.26
Busby	Yellowstone	T.	T.	.09	.10					.06	.03						.01	.04		.08		T.					.27				.09	.11	0.88
Busteed	do			.04	.24					.05	.03		T.	.04			T.	T.	.01	.03						T.						.12	0.56
Canyon Ferry	Missouri			.05							.08		.04						.03														0.20
Cascade	do	.11		.26	.18					T.	.05	T.	.09	T.	.09		.12	T.	.14	.04			T.							T.		.04	1.12

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Montana—Contd.																																	
Chessman Reservoir	Missouri		T.	.22	.18				.09	.12	.03	.04	.35	.04			.18	.06	.33				.22		T.					.02	.03	.26	2.17
Chester	Marias				.03							.03							.06														0.18
Chinook	Milk				.25		.01				T.		.01			.11	T.	.17	T.	.12										T.		.01	0.86
Clearcreek	do			.60				.20						.20		.65				.40						.50							2.55
Clydepark	Yellowstone			T.			.10				.05				.05					.03													0.23
Conrad ‖	Marias			.05	.50	.10						.10						.25					T.	T.				.10	.10				1.20
Copper	Missouri	.05	T.	.02	.06	.02	T.	T.	T.	.04	.07			T.	T.		T.	.05	.20		.04	.06	T.		.05	T.				.01		.09	0.76
Crow Agency	Bighorn			T.	.16	T.				.13	T.			.07				.06		.19							.35					.15	1.11
Culbertson	Missouri										.15		.20				.10									.15				.10			0.70
Cut Bank	Marias				.18							T.				T.	.10		.12					.08		T.			T.				0.48
Denton	Missouri	.05		.40	T.	T.				.01	.04	.12	.10		.03	T.	.03	.02	.15	T.			.04			T.	.06			.20	.03	.15	1.43
Dillon	Jefferson	T.		.20						.15					.03				.15		.08												0.61
Dry Wolf Camp	Missouri	T.	.07		.20	.02	.18	.01		T.	.40		.05	T.			T.		.25	.04	.27	T	.02	T.		T.				.90	.10	1.00	3.51
Dunkirk	Marias			.15	.07				T.	T.	.10						.01		.02											.05		.10	0.50
East Gallatin River	Gallatin																																
Ekalaka	L. Missouri			.08						.02	.04						T.	.04		T.										.02		.20	0.20
Fallon	Yellowstone										.10						T.	.05								.10							0.25
Findon	Missouri	.01	.02	.12	.07	T.		T.	T.	.13	.05	.03	.06	T.	.02	T.	.07	.05	.06	.01		.07	T.		.06	T.	T.			T.	T.	.08	0.91
Fish Creek	Jefferson		T.	T.		.30				.18	T.			.03	T.	T.	.05	.03	.10			.03	T.		T.					.03		.16	0.91
Flathead Creek	Yellowstone				T.				T.	.18	T.		.11				.10	.03	.06					T.						T.		.16	0.64
Forsyth	do			.75						T.	T.	.23	.05																	T.	T.	.08	1.11
Fort Benton	Missouri						.60					.20							.30			.20											1.30
Fort Shaw	do	.01		.56	.06					T.	03	T.	.08		.05		.26		.07											T.		T.	1.12
Foster	Bighorn			.15	.07					T.	.03			.02			T.	.01	T.	.06		T.	T.			T.	.15			T.	.01	.07	0.57
Garneill	Missouri																																
Glasgow	Milk										.05		.05					.10								.50				.25			0.95
Glendive	Yellowstone									.15			.15				T.	T.								.08						.05	0.43
Goldbutte	Marias	T.		.38							.08		.13			.10	T.													.08		.26	1.03
Graham	Powder		.25	.30	.09					.02	.07			T.			T.			.05						T.	.01	T.		T.	.01	.07	0.87
Great Falls	Missouri	T.	T.	.24	.08						.06	.04	.17		.16		.21		.10							.02				.14		.03	1.25
Harlowton	do			.02	.04	.04				.02	.02			.02					.01	.01													0.18
Havre	Milk			.61		T.					.02	.02	.10		.30	T.	.17	T.	.12	.02			T.			.04				.02	T.	.04	1.46
Helena	Missouri	T.	T.	.15	.02	T.			.01	.04	.04	.05	.19				.05	.01	.18	T.	T.		T.		T.	T.				.03		.02	0.79
Highwood	do		.02	.60	.30					T.	.10	.07	.14		.22		.05	.03	.10	T.			.04				T.			.10	.04	.25	2.06
Hinsdale	Milk																																
Huntley	Yellowstone				.17					.03			.03							.10												.08	0.41
Jordan	Missouri				.32						.16	.04	.08	.20																			0.80
Knobles Ranch	Milk	.04		.20	.05					T.		.05	.04			T.	.09	.02	.05							.08				.18	T.	.15	0.87
Lewistown ‖	Missouri	T.			.14							.10	.10	.05			.03	.03	T.	.15				.14		.27				.17	.03	.10	1.31
Lonetree	do	.14		1.10	.10						.07					.16			.25											.23		.14	2.19
Lothair	Marias										.25														.30						.27		0.82
Lytle	Missouri																																
Malta	Milk			.06		T.					T.	T.	.05			T.	.12	T.	.08	T.						.02				T.		.04	0.37
Medicine Lake	Missouri	T.			.32						.05		.05				T.	T.	T.							.10				.01			0.21
Mildred	Yellowstone									T.	.01		T.				T.									.03							0.04
Miles City	do		.01	1.27	T.					.06	.06	.05	.16	.02			.04	.01	.01	.04							.02			.02	.02	.01	1.80
Norris	Madison				T.	T.				.05	.01								.03											T.		.10	0.19
Olsen Creek	Jefferson																																
Pinegrove	Missouri		.10	1.50													.10	.10	.10		.20					.30		.9		.50	.40	.20	3.50
Pipestone Pass	Jefferson				.07				T.		.02			.09	.05				.32	.01		T.	T.			T.						.07	0.63
Plevna	Yellowstone			T.	.02						.17		.02	T.						.01						.01	.04			T.	.02	.01	0.30
Poplar	Missouri										T.		T.		T.	T.	T.								T.	T.				.20	T.		0.20
Red Lodge	Yellowstone			.17	.31					.03	.03								.20	.21											.05	.17	1.17
Renova	Jefferson			T.						.20			T.				T.		T.													T.	0.20
Ryegate	Missouri				.20					.30			.02																			.04	0.56
Savage	Yellowstone										.08	.02	.10	T.			T.	T.	T.							.09				.04	T.		0.33
Shelby	Marias																																
Sidney	Yellowstone	T.									.02		T.				T.	T.		T.						.24	T.			.08	T.		0.34
Springbrook	do										.20		.02	.01			.15	.10	T.	T.			T.		T.	.25	.25	T.		.18	.42	.05	1.63
Sunlit Farm	Milk			.12							T.	T.	.07		.07		.07	T.	T.						.90				T.		.02	1.25
Sun River Canyon	Missouri		.13	.76									.50						.70										.10			2.19
Three Forks	Madison									T.	.10		T.	.04			T.	.03					T.						T.	T.	.04	0.21
Utica	Missouri	T.			.90					T.	T.	T.	.09						.31				.08						.07			1.45
Valentine	do		T.	.06							1.50					.03		T.			.03					T.			T.	T.	.06	2.28
Valier	Marias			.19	.05							T.	.12				.12												T.	T.		0.48
Wall Rock M't'n	Missouri			.06				.29		.13	.02	T.	.15		T.				.03	.05			.01			.03				.03		.30	1.10
Wheaton	do		.45		.35					.30		.35	T.				.10		.20													.20	1.95
White's ranch	Yellowstone										.08		.07				T.	.01								.03	T.			T.	T.		0.19
White Sulphur Spgs	Missouri	T.	.04	.03									.17				.04		T.						T.					.01		.09	0.28
Wilder	do			.67						T.	.08	.09	.22			.08	.09		.08	.06	T.					T.				T.	T.	.36	1.73
Wolf Creek	do	.03		.26	.05	.03			T.	T.	.01	.02	.26		.04				.06	.01					T.	T.				.04		.06	0.87
North Dakota.																																	
Aplin	Knife		T.											.03												.05				.20	.05		0.33
Arnegard	Missouri																																
Ashley	do										.10																						0.10
Beach	L'le Missouri										.05							.07								.30				.04			0.46
Belfield	Heart																																
Berthold Agency	Missouri										.10		.05				T.								T.	.18				.14			0.47
Bismarck	do	T.			T.						.08		.03				.03			T.					T.	.12		T.	T.	.11	T.		0.37
Buford	do							.20			.20		.10		T.		T.	.20		T.					T.	T.				T.			0.70
Carson	Heart										.10						T.									T.					T.		0.10
Dickinson	do										.05		T.				T.	.02								T.	T.			.04	.02		0.13
Edgeley	James												.05	.05																	.21		0.31
Energy	Missouri																																
Epping	do	.05										.04	.03												.06	.30				.08			0.56
Fullerton	James										.10															.01	T.	T.		T.	.45		0.56
Garrison	Missouri								T.		.30		T.	.10				T.							T.	T.			T.	.20	.10		0.70
Haley	Grand									T.	.10			.06			T.									T.				T.	T.		0.16
Hettinger	do									T.	T.						T.	T.								T.				T.	T.		T.
Howard (near)	Missouri	T.			T.					T.	.10		.10			T.			T.						.20		T.	T.	.20			0.60
Jamestown	James											.20		.10				.10								.10	.10	.10	.10		.50		1.30
Krem	Knife																																
Lamoine	Missouri												T.	T.			T.									.20		.10	.10	*	.40		0.80
McHenry (near)	James																																
Marmarth (near)	L'le Missouri			T.						T.	.05			.03			T.					T.				T.	.02			.02	.02	T.	0.14
Marstonmoor	James		T.		T.						.15		T.	.02			T.	T.	T.							T.	T.	T.	T.	.23	T.		0.40
Medora	L'le Missouri	T.					T.				.25		.02				T.	T.		T.						.85			.85		T.		1.97
Melville	James										.08																	.12		.40			0.60
Mott	Cannon Ball	.02			T.	T.					.19			.10			.09									.22				.18	.12		0.92
Napoleon	Missouri													T.													.07		.05		.08		0.20

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
North Dakota—Con.																																	
New England	Cannon Ball				T.					T.	.30			.10				T.								.10					T.		0.50
New Rockford	James				T.						.10			T.			T.	.10				T.					T.	T.	T.	.20	.10		0.50
New Salem	Heart										.20						.10													.10		0.40
Orange	Cannon Ball										.10															T.			T.			0.10
Ranger	L'le Missouri										.30							T.								.10				.08		0.48
Steele	Missouri										.10				T.	.04				T.					.04	.05	T.		T.	.06			0.29
Turtle Lake	do										.20															T.	T.	T.		.10			0.30
Washburn	do																T.								T.	.03		.05		.15		0.23
Williston	do	T.			T.					.01	.08		.10			T.	.04	T.	T.	T.	T.				.02	.18				.09	T.		0.52
South Dakota.																																	
Aberdeen	James																		.40							T.					.15		0.55
Academy	Missouri				.06						.02								T.		T.						T.	.03			T.		0.11
Alexandria	James																		T.								T.	T.			T.		T.
Armour	Missouri										T.			T.														T.			T.		T.
Bellefourche	Cheyenne			.32	.05						.03						.03	.11															0.54
Brookings	Big Sioux													T.														.02					0.02
Bryant	do									T.				T.				T.													T.	T.	T.
Camp Crook	L. Missouri			1.80	.01					.10	.06	T.		.01			T.	.04		T.						T.		T.		T.	T.		2.02
Canton	Big Sioux																																T.
Cascade Springs	Cheyenne					.15																										.01	0.16
Castlewood	Big Sioux											T.		T.				T.	.01								T.	T.	T.	T.	T.	T.	0.01
Centerville	Missouri						.02				.03			.02					T.										T.		.02		0.09
Clark	James										.02			.01				.02								T.	.02				.02		0.09
Cottonwood	Missouri		T.	T.	.13						T.							.02			T.									T.	.03	0.18
Custer	Cheyenne		.20	.10																													0.30
Deadwood	do	.10		1.00	.10													.05								.15	.20			.35	.10	2.05
Deerfield	do	.03	.01	.27	.13	T.					T.						.02	.10			.01					.07	.03	.07	.05	T.	.03	0.82
De Smet	James										T.			T.														T.		T.		T.
Dowling	Cheyenne			.30	.10						.10							.10			.05										T.	0.65
Dumont	do	.17	.17	.96	.38												.18	.46								.32	.29			.66	.11	3.70
Eagle Butte	Grand			T.								.15	T.				T.	.07						T.	T.	T.				T.	T.	0.22
Eales	Missouri				T.						.05	T.		.03			T.	.16						T.		T.		T.	T.		.05		0.29
Elk Mountain	Cheyenne		.05		.40													.05															0.50
Englewood	do				.40	.20											.10	.15		.05						.15		.10	.01	.01	.64		1.81
Eureka	Missouri										.05			T.			T.									T.	.04	T.			.01		0.10
Fairfax	do				.31	T.					.05																					T.	0.36
Faulkton	James																	.05															0.05
Flandreau	Big Sioux		T.						T.	T.				.05			T.													T.		0.05
Forestburg	James																								T.					T.			T.
Fort Meade	Cheyenne	.40		.30									.05																			.20	0.95
Frederick	James				T.						T.			T.					.05					T.		T.	T.	T.			.02		0.07
Gannvalley	Missouri																	T.										T.					T.
Greenmont	Cheyenne	.19	.10	.90	.90																							.18			.35	.09	2.71
Greenwood	Missouri			.15							.07																	.08					0.30
Hardingrove	Cheyenne			*	.21						.01							.01	.02														0.25
Hardy Ranger Sta	do	.21	.02	.54	.11	T.				T.	T.						.03	.13		T.	.03				T.		.24	.14	.10		.61	T.	2.16
Harveys Ranch	do	.65	.46		.20												.20									.30	.20			.70	.19		2.90
Hermosa	do			.22							.02									T.											T.		0.24
Highmore	Missouri										.05							T.						T.				T.	T.				0.05
Hopewell	Cheyenne				.05						T.							.05										T.		T.			0.10
Howard	Missouri										.02			T.					T.						T.	T.	T.	T.		T.			0.02
Howell	James										.02							.02						T.		T.		T.		.01			0.05
Huron	do										T.		T.	.01				T.								T.	T.	.01		.01			0.03
Ipswich	do										T.			T.					.22							T.	T.	T.		T.			0.22
Kadoka	White		T.	.07	T.													T.												.04			0.11
Kennebec	Missouri				.05						T.										T.							T.		T.			0.05
Kimball	do																		T.											T.			T.
La Delle	James													.02			.05											T.		.03			0.10
Lead	Cheyenne	.08		.57	.10												.05	.04									.12	.09	.06		.32	.10	1.53
Lemmon	Grand										.10			.05																			0.17
Marion	Missouri										T.	T.		T.					T.												T.		T.
Marston	do										T.	T.						T.			T.							T.					T.
Meadow	Owl									.05	.05			T.			T.	.15								T.					.05		0.30
Mellette	James										.02			.01				.02								T.	T.	T.			.04		0.09
Menno	do										.02		T.					T.										T.		T.			0.02
Milbank	Minnesota				T.							.03		.14					.28								T.	T.	.03		.10	.03	0.61
Mitchell	James																	.03								T.				.03		0.06
Mobridge	Missouri										.40			.20				.35								.40							1.35
Murdo	White			T.	.30						T.																			T.			0.30
Oelrichs	Cheyenne					.20														T.										T.			0.20
Onaka	James									.05			.05				T.	.10							10	T.		.04					0.34
Onida	Missouri										T.							T.															T.
Orman	Cheyenne			.28	.09					T.	.04						.01	.13			T.							.01					0.56
Ottumwa	Missouri	T.		.30														T.								T.		T.			.20		0.50
Parkston	James										.06		.03					.02					T.					.07		.09			0.27
Pierre	Missouri			T.							T.						T.	T.		T.				T.				T.			T.		T.
Plankinton	James										T.			T.	T.				.05		T.			T.				T.			T.		0.05
Pollock	Missouri				T.						.10			.10												10			T.		.01		0.31
Rapid City	Cheyenne		.06	.23	.07					T.								T.	T.	.01						T.		T.			.22	.03	0.62
Redfield	James																														T.	.01	0.01
Rothford	Cheyenne			.27	.08												.04	.01			.02					.06		.09		.18	.06	.05	0.86
Roslyn	Big Sioux										T.			.05				T.	.40								.03	.10	T.	T.	.02		0.60
Selby	Missouri											.09												T.		.08				.10			0.27
Sioux Falls	Big Sioux					T.					T.			T.					.01									T.	T.	T.	.04	T.	0.05
Sisseton	Minnesota																	.07												.03			0.10
Sorum	Owl			.18	T.	T.					.15	T.						.09														T.	0.42
Spearfish	Cheyenne	T.		.40						T.	.02						.04	.02		T.								.03			.10	.05	0.66
Stephan	Missouri					T.					T.			T.				.03						T.		T.		T.	T.		T.		0.03
Tama	Cheyenne			.01							T.	T.					T.														T.		0.01
Timber Lake	Grand									T.	.05			.05				.26	T.							T.			T.		T.		0.36
Tyndall	Missouri				.04														T.												T.		0.04
Vale	Cheyenne			.40	.15						T.						T.	.03														T.	0.58
Vermilion	Missouri				.10			T.																							T.		0.10
Waters Ranch	Cheyenne	.01		.44	.08						.02			.01				.05	.15		.01	.03					.01	.03			.04	.03	0.91
Watertown	Big Sioux											T.							.07								T.			.03		T.	0.10
Wentworth	do													T.														T.					T.
Wessington Springs	James																	.01										.01	T.		.01		0.03
White Lake	Missouri																																
Winner	White			.15							T.							T.													T.		0.15
Wood	do	T.		T.	.15						T.							T.			T.										T.	.10	0.25
Yankton	Missouri				.04	T.		T.			.01			T.				T.						T.			.02				.01		0.08

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota.																																	
Pipestone	Big Sioux											T.																				T.
Colorado.																																	
Arriba	Republican	T.					T.					T.									T.										.20	0.20
Auldhurst	South Platte	.04			.30		.25											T.			.30									.04		0.93
Bennett (near)	do				.21							.04									.08											0.33
Boulder	do				.46																.03											0.49
Burlington	Republican				.15																											0.15
Cassells	South Platte	.13				.29				T.			T.				.10			T.									T.		T.	0.52
Castle Rock	do				.07	.26						T.									.03		T.							T.		0.36
Cheesman	do	T.			.14	.15														.14										.07		0.50
Cheyenne Wells	Smoky Hill				.20	.33	.05					.02																			T.	0.60
Cope	Republican																															
Corona ‖	South Platte	1.10	.40	.10		.30					T.	.10	T.					.30	.30		.40			T.	.15	.15	.18				T.	.18	3.66
Denver	do				.22	.05					.02	.02					T.	T.		.04	T.			T.							T.	.01	0.36
Edgewater	do				.31	.02																											0.33
Estes Park Fish Hatchery.	do		T.	T.	.20	.10											.05	.10		T.										T.	T.	0.45
Fort Collins	do				.10	.14						.03					T.			.03											T.	0.30
Fort Lupton	do																															
Fort Morgan	do				.10	.15																									T.	0.25
Frances	do	.28	.18	.05	.40	.19					*	.05	*	.01			.08	.30			.08						T.				.05	1.67
Fry's Ranch	do	T.			.10	T.											.20	.04		.35							T.					0.69
Georgetown ‖	do				.19						.04		.01				.16	T.													.05	0.45
Greeley	do				.15	.13					T.	T.																			T.	0.28
Grover (near)	do																															
Hartsel	do	T.			.08		T.											.03		.01										.03	0.15
Hawthorne	do				.38	.29						.11						T.			.03			T.								0.81
Holyoke (near)	Republican				.18																							.28				0.46
Idaho Springs	South Platte	.03			.08	.08						.02					.04	T.			.04										.01	0.30
Julesburg	do				.04	.05														T.											T.	0.09
Kersey	do				.15																											0.15
Laporte	do				.13	.20															.10											0.43
Le Roy (near)	Republican																															
Longmont ‖	South Platte											.12																				0.12
Long's Peak (near)	do					.33					.05						.20	.10														0.68
Merino	do				T.	T.																									T.	T.
Moraine	do																															
Platte Canon	do				*	.62	.02				.02																					0.66
Saint Cloud	do	T.			.35	T.										T.		T.		.04							T.				.05	0.44
Sedgwick	do					.03																									.05	0.08
Silver Lake	do																															
Spicer (near)	North Platte			.50	T.												.20	T.	.05												T.	0.75
Sterling	South Platte				*	.05																									T.	0.05
Waterdale	do					*	.25			.03								*	*	.02												0.30
Wray	Republican				.16	.16																									.09	0.41
Yuma	do				.08	.04																									.03	0.15
Nebraska.																																
Ainsworth	Niobrara					.18					.10																T.	T.	.10		T.	.15	0.53
Albion	Loup				T.	.10																											0.10
Alliance	North Platte				T.	.05																								T.		T.	0.05
Alma	Republican					.03	.03	.09																									0.15
Arcadia	Loup				T.	.20		.10			T.											T.								T.	T.	0.30
Arden ‖	do			.01	T.	.12	T.	.08			T.																			T.		0.21
Ashland	Platte				T.	.30	T.	.40															T.	.02				T.	T.			0.72
Ashton	Loup						.02				T.		T.								T.											0.02
Atkinson ‖	Elkhorn										10																			T.	.10	0.20
Auburn	Missouri					.10	.10	.30													.10		T.	.07				.07			T.	0.74
Aurora	Blue					.20	T.	.10			T.	T.									T.										T.	0.30
Beatrice	do					T.		.19													.30									T.		0.49
Beaver City	Republican						.29																								T.	0.29
Bellevue	Missouri				.10	.30	T.	.30													.10			.02								0.82
Benkelman	Republican																															
Bertrand ‖	do						.20																									0.20
Blair	Missouri				.18	.18	.04	.15													.02			.03								0.60
Blake	Loup	T.				.05					T.																				T.	0.05
Bloomfield	Missouri				.20			T.			.02																.01		T.			0.23
Bradshaw ‖	Blue						.30	.10													.12		.02									0.54
Brewster	Loup			.02	.02	.02																							T.		T.	.02	0.08
Bridgeport	North Platte				.10	.10																					T.				.05	0.25
Broken Bow	Loup						.07																									0.07
Bruning	Blue					.02	.02	.26			T.						T.				.01		T.	.05						T.		0.36
Burge	Niobrara				T.	T.																					T.				T.	T.
Burwell	Loup					.15																										0.15
Butte	Niobrara				.25						.10																	T.				0.35
Cairo	Platte					.15		.10																						T.		0.25
Callaway	Loup					.15																										0.15
Cambridge	Republican					.20	.20				T.										T.											0.40
Columbus ‖	Loup				.05	.10		.10																					T.			0.25
Crete	Blue					.31	.09	.09																									0.49
Culbertson ‖	Republican					T.		.05													T.											0.05
Curly	North Platte				T.	.12																				.10					.10	0.32
Curtis	Republican					.02		.02													0											0.06
David City	Blue				.02	.60		.15													T.							.03	.04		T.	0.84
Du Bois	Missouri					.04		.70													T.								.02	T.		T.	0.76
Dumas	Loup					.15																									T.	0.15
Elm Creek ‖	Platte													.17																		0.17
Elsie ‖	Republican				.20								T.																			0.20
Ericson (near)	Loup					.10		T.			T.																				T.	0.10
Ewing ‖	Elkhorn				.10	T.	T.																					T.			T.	0.10
Exeter	Blue						.40														T.		T.	T.								0.40
Fairbury ‖	do					.05	.30	.08			T.									T.			T.									0.43
Fairmont ‖	do					.20	.05	.25	T.			T.									.02			T.					T.		T.	0.52
Falls City	Missouri					T.	.01	.09													T.										T.	0.10
Fort Robinson ‖	White				.10	.10																									.07	0.27
Franklin	Republican					.10	T.																								T.		0.10
Fremont	Platte				.15	.80		.20													T.												1.15
Fullerton	Loup					.20	.10																										0.30
Geneva	Blue					.20	.09	.30			T.						T.				.02		T.	.02					T.			T.	0.63

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Nebraska—Contd.																																	
Genoa	Loup				.08	.04	T.	.08										.10			.05						T.				T.	0.25
Gordon	Niobrara			.30																													0.40
Gosper	Republican					.20																											0.20
Gothenburg	Platte					.20	T.														.10												0.30
Grand Island ‖	do						.33	.08													T.										T.	0.41
Grant	Republican					.05	.02				T.																				T.	0.07
Greeley	Loup				.02	.25		.04				.02								.04									.01		.02		0.40
Guide Rock	Republican					.15		.30															T.										0.45
Haigler	do				.40			.05																									0.45
Halsey	Loup			.02	.01	.03	T.																							T.	.03		0.09
Hartington	Missouri				.05	.02		T.																				T.			T.	T.	0.07
Harvard	Blue					.20	T.	.19												.12			T.					T.					0.51
Hastings ‖	do					.05	.20	.10													.10											.02	0.47
Hayes Center	Republican				*	.40					.10									.10												.05	0.65
Hay Springs	White	T.	.15		.20	.10					T.																	T.			.10		0.55
Hebron	Blue					T.	.10	.30													T.		T.										0.40
Hemingford ‖	Niobrara				.01		.01				.01																					.02	0.05
Hendley ‖	Republican					.40													T.												T.		0.40
Hershey ‖	South Platte					.05	.02																										0.07
Hillside	North Platte			.01	T.	.10	T.				.01	T.																			T.	T.	0.12
Holdredge ‖	Republican					.05	.20																										0.25
Hooper	Elkhorn			.20	.20	.40																											0.80
Hull (near) ‖	North Platte				T.	.14																		T.						T.		T.	0.14
Imperial	Republican				.05	.10					T.																					T.	0.15
Kearney	Platte					.21	.10																									T.	0.30
Kimball ‖	South Platte			T.	.10																					T.					.10	0.20
Kirkwood	Niobrara			.20							.05																	T.			.05		0.30
Kowanda ‖	North Platte				T.	.04																									.20	0.24
Lexington	Platte																																
Lincoln	do				T.	.08	.07	.12			T.	T.								.03			.01	T.				T.				T.	0.31
Lodgepole	South Platte				T.	.10																										T.	0.10
Loup City	Loup				.15																											T.	0.15
McCook	Republican																																0.00
McCool Junction ‖	Blue					.60					T.										T.							T.					0.60
Madison	Elkhorn				.20	.10	.10	T.			T.																						0.40
Marquette	Blue				T.	.10		.10			T.										T.							T.				T.	0.20
Mary	Loup			T.	T.		.05				T.																T.	T.			.02	.02	0.09
Mason City ‖	do			.05	.05		.30																								.05		0.45
Minatare	North Platte				.50																											.25	0.75
Minden	Blue					.18	.03	T.			.01					.01					T.												0.23
Mitchell	North Platte	T.		.02	.02	.01																										.03	0.08
Nebraska City	Missouri							.70													.05												0.75
Nelson	Blue						.30																										0.30
Norfolk	Elkhorn				.18	.04		T.			T.																		T.			T.	0.22
North Loup	Loup					.15	T.	.02			T.										T.										T.		0.17
North Platte	Platte				.01	.15																											0.16
Oakdale ‖	Elkhorn			.10		.05		.03			.02																	T.				T.	0.20
Omaha	Missouri			.04	.08	.19	.08	.26						T.							.04							T.			T.		0.69
O Neill	Elkhorn				.05							T.																				T.	0.05
Ord	Loup						.30																										0.30
Orleans ‖	Republican																																
Osceola	Blue					.40		.20																									0.60
Palisade	Republican					.20																											0.20
Palmyra	Missouri																																
Pawnee City	do					.20		.20																				T.					0.40
Paxton	South Platte					.20					.05																				T.	T.	0.25
Plymouth ‖	Blue						*	.09													.09												0.18
Purdum	Loup			.02	T.	.05					T.										T.						T.				T.	.03	0.10
Ravenna	do					.20		.05			T.										.05											T.	0.30
Red Cloud	Republican				T.	.07	.10	.14			T.					T.					T.		T.										0.31
St. Libory	Platte					.30	.20												.05												.05	0.60
St. Paul	Loup					.04														.05												T.	0.09
Santee	Missouri																																
Schuyler	Platte				T.	.23	.13	.13																				T.	T.				0.49
Scottsbluff	North Platte			.06	.05	T.												T.						T.		.02					.07	0.20
Seward	Blue					.42																	.08					T.	T.				0.50
Sidney	South Platte				.10	.10					.05																					.10	0.35
Springfield ‖	Platte				.05	.10	T.	.20	.35											T.	T.		T.										0.70
Springview	Niobrara				.20	T.																						T.			T.	T.	0.20
Stanton	Elkhorn				.20	.20		.10													T.								T.				0.50
Stratton ‖	Republican			.30																													0.30
Superior ‖	do							.40																									0.40
Syracuse	Missouri					.10	.10	.70									T.				.10		T.	.05				.07					1.12
Table Rock	do					.03	.12	.50													.03				.05				.09			T.	0.82
Tecumseh	do						.20	.30													.10			.04					.08				0.72
Tekamah	do				.30	.30	.10																										0.70
University Farm	Platte							.27																				.06					0.33
Valentine	Niobrara	T.	.02	.02	T.	.05					.01		T.					T.		T.							T.	.01			.04	T.	0.15
Wahoo	Platte			.20		.30		.20												.10													0.80
Wakefield	Elkhorn				.20	.04		.05																					.20				0.20
Walthill ‖	Missouri				.40				.30																				.60				0.60
Watertown	Platte				.30																												0.30
Wauneta	Republican					.30																										.05	0.35
Weeping Water	Missouri				T.	.08	.14	.18													.02			T.					T.			T.	0.42
Westpoint	Elkhorn																																
Wisner	do					.20	.05	.03																				T.					0.28
York	Blue				T.	.40		.20				T.									.05			T.				T.				T.	0.65
Iowa.																																	
Afton	Grand				.30	.10		.50													T.			.33								T.	1.23
Allerton	Chariton				.20	.10	.20	.20	.15												T.		T.	.18									1.03
Alton	Floyd					.10		.05			T.								.05												T.		.20
Atlantic	Nishnabotna				.26	.17	T.	.28	.03					T.			T.				.03		T.	.12									.80
Audubon	do				.30	.31		.32																					T.				.93
Bedford	Missouri					.05	.05		.50												.02		.01	.20					T.				.83
Centerville	Chariton				.40	.05	.40	.10													T.		.02						.02				.99
Chariton	do				.35		T.	.30																								T.	.65
Clarinda ‖	Nodaway				.15	.15	.15	.35	.18												.04	T.	T.	.13									1.15
Corning	do				.20			1.00																.18									1.38
Corydon	Chariton				.20	.03	.19	.17				T.		T.			T.				T.		T.	.20								T.	.79

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa—Continued.																																	
Council Bluffs	Missouri				.20	.30	.10	.40														.20	T.	T.				T.				1.20
Creston ‖	do				.18		.03	.10	.18												.01			.30								.80
Cumberland	Nodaway			.40		.10		.30													.10			T.								.90
Denison	Missouri				.10	.20	.20																T.						T.			.50
Elliott	Nishnabotna				*	*	1.05														T.		T.									1.05
Greenfield	Nodaway				.25	.20	.05	.60													.05			.03								1.18
Harlan	Nishnabotna			T.	.16	T.	.20	.21				T.		T.							T.		T.	.07						T.		.64
Inwood	Big Sioux						.01											.02												.08		.11
Lake Park	Little Sioux																															
Lamoni	Grand				.12		.12	.30													T.		T.									.54
Larrabee	Little Sioux																															
Le Mars	Floyd				T.	.01	.01	.02			T.								T.											T.		.04
Lenox	Missouri				.10	.02	.05	.60				T.									.03			.03							T.	.83
Leon	Grand					.30	.06	.07															T.	.25								.68
Little Sioux	Little Sioux				.20	.47		.17											T.													.84
Logan	Missouri																															
Mount Ayr	Grand				.11		.05	.27	T.												T.		T.	.12				T.				.55
Murray	do				.15	.01	.02	.13				T.									T.		T.	.32								.63
Northboro	Missouri					.06	.22	.02													T.		T.	.07								.37
Odebolt	Little Sioux				.04	.10	.08																									.22
Onawa	Missouri				.20	.40	T.	.10	T.												T.									T.		.70
Pacific Junction	do				.10	.06	T.	.44	T.												.05		T.	T.				T.				.65
Rock Rapids	Big Sioux																															
Sheldon	Floyd					T.								T.					.06													.06
Sibley ‖	Big Sioux						T.	T.	.02			T.		.01					.05							T.		T.		.03	.02	.13
Sioux Center	Floyd					.05		.05			T.			T.					.10											.05		.25
Sioux City	Missouri			.07	.03	.05	.01	.05			T.			T.													T.	T.		T.		.21
Spencer	Little Sioux						.05	.05											.15								T.	T.		T.	T.	.25
Thurman	Missouri				T.	.02	.10	.40	T.			T.		T.							.02			T.				T.				.54
Washta	Little Sioux				T.	.05		.10											T.													.15
Kansas.																																
Abilene	Smoky Hill						.02	.12	T.		T.											T.										0.14
Agricultural College	Kansas					.10	.05	.50																.10								0.75
Alton	Solomon					.05	.05	.15			T.										T.										T.	0.25
Atchison	Missouri					T.		.40															.01					.06				0.47
Beloit	Solomon					T.	.01	.14	.02											T.			T.								T.	0.17
Blakeman	Republican				T.	.32	T.																								.03	0.35
Blue Rapids	Blue							.40	.35												T.			T.								0.75
Centralia	do					T.	.10	.80									T.															0.90
Chapman	Smoky Hill																															
Clay Center	Republican						.20	.30												T.											T.	0.50
Colby	do				.20	.30	.10				.02																				.03	0.65
Concordia	do					.05	.18	.32													T.		T.								T.	0.55
Densmore	Solomon				T.	.01	.04	.05																							T.	0.10
Dresden	Republican				.05	.25	.05	T.																							T.	0.35
Ellsworth	Smoky Hill					.03	.23	.35																T.						T.		0.61
Emmett	Kansas					T.	.19	.26				T.												T.							T.	0.45
Enterprise	Smoky Hill					.04	.05	.18												T.											T.	0.27
Eskridge	Osage					.01	.16	.16			.01	T.									T.		T.	.05							T.	0.39
Farnsworth	Smoky Hill				T.	.02	.03	.18				T.																			T.	0.23
Fort Scott	Osage					T.	T.	.05			.60	.20					.26				.17		.24	.02							T.	1.54
Frankfort	Blue					T.	T.	.60																								0.60
Garnett	Osage					T.		.22			.15						.25				.36		T.									0.98
Goodland	Republican				.20	.20																								T.	.10	0.50
Hanover	Blue					T.	T.	.20													*T.										T.	0.20
Harrison	Republican					T.	.11	.65													.02										T.	0.78
Hays	Smoky Hill					T.		.36																						T.		0.36
Hill City	Solomon				T.	T.	.10	.10																								0.20
Horton	Kansas						.15	.36				T.									T.		T.	T.				.08			T.	0.59
Hoxie	Solomon				T.	.20	.10				T.	T.																			T.	0.30
Lawrence	Kansas					T.	.16	.21									T.				T.			.08							T.	0.45
Leavenworth	Missouri					T.	.20	.10																T.							T.	0.30
Lebanon	Solomon					.40		T.													T.											0.40
Leoti	Smoky Hill				T.		.04																									0.04
Lincoln	Saline						T.	.35					T.																		T.	0.35
Lindsborg	Smoky Hill							.34																							T.	0.34
McCracken	do					.10	.10					T.																				0.20
Minneapolis	Solomon					T.	.10	.27				T.									T.		T.								T.	0.37
Moran	Osage					T.	.02	.20		T.	.10	T.					.41				T.		.15	.10								0.98
Natoma	Saline																															
Norton	Republican				T.	.10	.10	T.																							T.	0.20
Oberlin	do					.25	.04	.08											T.												T.	0.37
Oketo	Blue					.01	*	.27													T.		T.									0.28
Olathe	Kansas					T.	.10	.28			T.	T.					.13				T.		.04					.08			T.	0.63
Oskaloosa	do						.21	.25																T.				T.				0.46
Ottawa	Osage																															
Phillipsburg	Solomon					.10	T.	.10			T.																				T.	0.20
Plainville	Saline					.05	.10	.05																							T.	0.20
Pleasanton	Osage					T.		.20			.24							.35					.21	.13								1.13
Quenemo	do						.14	.21			.08						.05						.08	.04								0.60
Republic	Republican					.10	.10	.40													T.										T.	0.60
Russell	Smoky Hill					T.	.10	.20																							T.	0.30
Russell Springs	do																															
Saint Francis	Republican					.12	T.	.05			T.										T.										.06	0.23
Salina	Smoky Hill				T.	T.	.20	.40			T.	T.									T.		T.								.01	0.61
Scott	do					T.	.31																								T.	0.31
Smith Center	Solomon								.08	.09																						0.17
Topeka	Kansas					.03	.06	.36			T.	T.											T.	.05				T.			T.	0.50
Tribune	Smoky Hill				T.		.25																									0.25
Valley Falls	Kansas					.02	.10	.32													T.		T.	.04							.01	0.49
Vinland	do					.03	.32	.18		T.	.02				T.								.02								T.	0.57
Wakeeney	Smoky Hill				T.	T.	.08	.03																							T.	0.11
Wallace	do					.06																										0.06
Wamego	Kansas					T.	T.	.70				T.					T.				T.			.08					T.			0.78

TABLE 2.—*Daily precipitation for January, 1913. District No. 6*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Missouri.																																	
Amoret	Osage					T.	T.					.21	.22				.30				.30		T.	.10								T.	1.13
Appleton City	do						.15				.50	.12				.29				.59		.10										1.75
Arlington	Gasconade							.10	.25		.15	.90	.30				.05	.13			1.60	.15		.85	.10								4.58
Arthur	Osage																																
Avalon	Grand					.05	.05	.30															.10										0.60
Bethany	do						.27	.28	.10												T.		T.	.36									1.01
Bolivar	Osage						.10				.46	.10					.36				1.13		.32	.19									2.66
Boonville ‖	Missouri						.04	.41	.15			.33	.03					.19			.08	.46		.45					.05				2.19
Brunswick ‖	Grand					.05	.10	.18	.20								.05	.12			.05			.25					.05				1.05
Clinton	Osage							.08			.65						.38						.20										1.31
Columbia	Missouri					.08	.20	.16			.38	.04					.23				.75		.69						.04				2.57
Conception	do																																
Crocker	Gasconade					.04					1.30						.07				1.10		.39	.55									3.45
Eldon	Osage					T.	.09	.13			.55	.07					.74				1.46		.37	.17					.01				3.59
Eldorado Springs	do						T.	.10			.88						.33				T.		.27	.22								T.	1.80
Fayette	Missouri					.40	.05	.24			.37						.25				.15		.36	.09					T.				1.91
Fulton	do										.45				1.52						.50		.21	.63									3.31
Glasgow ‖	do	T.				T.	.02	.03	.06			.26						.24			.12	T.		.14									0.87
Grant City	Grand				T.			.20	.40					T.								T.		.37					T.				0.97
Harrisonville ‖	Osage					T.	.10	.09	.08		T.	.20						.50			.23	T.		.45					T.				1.65
Hazelhurst	Grand				T.	.05	.10	.40															T.	.16					.05				0.76
Hermann ‖	Missouri					T.	.04	.34	.12		.06	.56	.08			.04	.01	.58			.82	.06		.80	T.				.04			T.	3.55
Houston	Gasconade		.10			.10	.20	.60			1.25	1.00				.25	T.	.75	T.		1.50		.50	1.00					T.		T.		7.25
Jefferson City	Missouri							.30	.02		.05	.52	.03			.02		.85			.90			.55					.02				3.26
Kansas City	do					.05	.07	.30			.01						.05						.04	.11					.01			.01	0.65
Kidder ‖	Grand					.10	.20	.30															.06					.12					0.78
Lamonte	Missouri					.11	.73	.09			.34	T.					.75					.45											2.47
Lebanon	Osage							.48			.50	.25					.25				1.36		.80	.42									4.06
Lexington ‖	Missouri						.05	.10	.20			.07						.14			.08			.18									0.82
Liberty	do					T.		.31			T.						T.						T.	.05				T.			T.	0.36
Lockwood	Osage																																
Marshall	Missouri					.05	.05	.15			.40						.26				.15		T.					.27				T.	1.33
Maryville ‖	do					T.	.10	.30	.20													T.		.09								T.	0.69
Mount Vernon	Osage						T.	.18			.41	.05						.16			2.30		.60	T.								T.	3.70
Nevada	do				T.	T.	T.						T.	T.			.24	T.	T.	T.	.22		.28						T.	T.	T.	0.74
Oregon	Missouri							.51				T.									.02			T.				.10					0.63
Pattonsburg ‖	Grand																																
Rolla	Gasconade																																
St. Charles	Missouri					T.	.10	1.05			.25	T.						.66			2.40			.46					T.			T.	4.92
St. Joseph	do					.06	.12	.26				T.									T.		.03	.03				.05				T.	0.55
St. Louis (1)	Mississippi					.33	.35	.37	T.	T.	.85	.06				.04	.28				1.34		.54	.12					.02		.04		4.34
St. Louis (2)	do					.01	.51	.62	T.	T.	.82	.22	.01			.04	.44			T.	1.32		.56	.28					.01		.05		4.89
Sublett	Chariton				.10		.40	.05	.15														T.										0.70
Tarkio	Missouri							.68																									0.68
Trenton	Grand			T.		.03	.20	.23													T.		.16					.05					0.67
Unionville ‖	Chariton				.20		.02	.22	.60									T.				T.		.26					T.				1.30
Warrensburg	Missouri					T.	T.	.15			.13	T.					.34				.34			.04	.06							T.	1.06
Warrenton ‖	do					.01	.03	.41	.12		.08	.50	.09			.05	.03	.54			.95	.06		.77					.06				3.70
Warsaw	Osage						T.	.35	T.		.50	.05					.45				.65		.34	.25					T.			T.	2.59
Wheatland	do																																

* Precipitation included in that of the next measurement.
† Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 6, Missouri Valley.*

Date.	Wyoming.																Montana.											
	Basin.		Cheyenne.		Fort Laramie.		Lander.		Newcastle.		Pathfinder.		Sheridan.		Yellowstone Park.		Billings.		Dillon.		Havre.		Helena.		Lewistown.		Malta.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	Min.	Max.	Min.	Max.	Min.
1....	38	0	27	13	43	23	29	7	38	10	30	17	36	8	21	9	34	20	37	4	35	14	28	19	35	12	40	16
2....	30	6	37	13	47	10	47	6	38	5	32	10	52	8	27	11	52	8	39	20	44	22	46	21	35	9	40	10
3....	47	12	44	33	48	14	48	17	38	20	40	28	51	17	32	6	27	20	41	23	27	18	45	15	28	0	36	21
4....	40	10	33	− 2	17	12	17	− 4	20	4	37	1	17	−19	10	−14	16	−10	33	18	18	−20	15	− 4	20	− 2	24	− 5
5....	24	−14	− 2	−11	0	− 4	− 4	−14	4	−10	1	− 9	− 4	−32	− 5	−28	− 4	−28	15	−12	− 7	−32	2	−11	1	−26	− 5	−26
6....	16	−26	− 6	−26	− 3	−25	− 3	−24	− 6	−26	− 4	−20	− 6	−34	− 5	−32	5	−29	10	−16	16	−36	10	−14	7	−26	3	−30
7....	24	−20	14	−20	15	−40	3	−26	5	−21	4	−12	6	−31	3	− 7	18	− 2	18	− 4	32	−20	26	2	34	−24	20	−20
8....	28	− 7	38	14	46	−20	18	− 9	36	− 1	25	2	28	− 5	22	2	38	15	33	8	36	4	32	17	36	− 6	40	2
9....	30	2	44	13	34	7	27	5	34	15	31	19	26	4	21	2	24	1	38	16	5	−12	20	− 4	2	− 3	29	−11
10....	31	− 2	34	9	26	14	29	1	30	0	26	19	4	−20	16	− 5	6	− 3	39	19	− 9	−12	2	− 9	− 2	−12	− 2	−14
11....	34	3	22	6	35	− 9	23	− 5	15	−10	18	3	− 6	−21	14	7	− 3	− 7	37	20	− 8	−22	1	− 5	− 5	− 9	− 6	−22
12....	33	−17	53	11	42	2	39	1	15	−10	28	12	6	−19	24	2	0	−10	36	12	− 8	−28	− 3	−14	27	−13	− 4	−25
13....	34	8	31	9	40	− 1	42	3	20	−20	25	10	26	−25	32	1	23	−28	36	14	7	−30	21	−17	39	−26	9	−32
14....	46	24	54	26	57	29	45	29	44	20	39	15	37	11	31	27	47	11	38	17	36	− 2	40	15	41	24	28	0
15....	44	20	49	26	59	25	45	25	50	24	40	27	49	9	31	25	33	12	39	18	1	− 5	43	10	37	15	14	− 2
16....	46	22	40	18	63	26	39	26	40	10	37	27	44	−10	27	18	10	− 3	37	20	− 3	−21	10	− 6	5	−11	4	− 8
17....	48	28	32	18	45	15	30	15	32	10	27	18	29	−10	21	13	14	− 6	38	17	− 2	−18	30	1	33	−13	2	−23
18....	47	26	46	25	58	25	41	25	42	8	37	16	48	3	30	14	48	8	38	9	5	−19	43	2	35	− 5	12	−15
19....	45	18	37	12	40	7	34	7	38	4	33	14	4	−20	14	− 8	− 8	−12	36	− 1	−12	−28	21	− 8	12	−27	− 3	−30
20....	47	20	23	3	40	− 4	28	− 4	21	−10	22	− 1	41	−26	12	− 8	22	−31	36	0	24	−36	31	2	26	−25	− 5	−37
21....	45	19	46	21	48	9	37	9	34	10	32	12	38	11	22	12	39	21	34	11	21	4	31	21	32	12	23	− 9
22....	42	12	49	19	55	19	40	19	42	20	35	22	35	11	30	5	32	17	39	14	21	−17	32	20	27	17	18	− 9
23....	40	5	31	13	43	3	34	3	34	8	33	10	28	0	17	0	37	4	39	10	28	−20	32	17	43	− 3	12	−27
24....	40	7	39	25	47	11	37	11	34	10	29	14	45	10	23	13	42	20	36	12	42	24	46	27	43	35	40	− 5
25....	41	10	44	33	56	19	53	19	44	24	43	24	54	25	36	23	50	30	37	11	40	34	48	37	36	20	42	24
26....	41	17	37	21	43	17	44	17	38	28	39	17	40	16	31	12	47	29	39	18	36	27	42	35	40	25	42	25
27....	44	24	44	27	50	12	51	12	40	18	39	19	46	16	30	12	52	27	40	20	39	28	46	37	48	26	41	19
28....	46	25	50	24	56	18	57	18	48	20	46	20	51	25	33	9	58	32	40	19	40	27	50	29	46	28	42	18
29....	45	20	49	24	58	17	49	17	45	24	41	25	52	26	30	15	50	32	41	20	41	27	43	25	37	7	43	25
30....	40	17	28	14	40	12	34	12	34	20	37	15	30	21	25	3	39	24	36	14	28	7	36	22	25	11	33	7
31....	38	20	31	16	20	8	39	8	20	0	32	13	26	11	28	16	21	9	37	17	24	5	36	24	10	10	10	− 3
Mns..	38.5	9.3	34.9	13.8	40.9	10.5	33.9	7.3	30.7	6.6	30.5	12.5	30.1	−1.3	22.0	5.0	28.0	5.5	35.2	11.9	18.2	−4.4	29.2	9.9	26.2	0.6	20.1	−6.0

Date.	Montana.				North Dakota.										South Dakota.											
	Miles City.		Poplar.		Berthold Agency.		Bismarck.		Dickinson.		Jamestown.§§		Williston.		Aberdeen.§§		Huron.		Kadoka.		Kimball.		Lemmon.		Pierre.		Rapid City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	39	24	36	19	35	16	36	14	32	21	34	17	34	11	43	18	46	23	41	23	45	25	.....	.....	45	25	37	20
2....	44	18	36	10	32	0	31	6	33	6	24	8	34	8	28	10	31	11	37	10	32	10	.....	.....	37	15	49	14
3....	34	23	34	20	30	19	32	11	29	18	23	14	33	12	24	8	32	20	37	20	33	17	.....	.....	33	23	35	18
4....	18	− 8	21	− 7	20	−10	11	− 9	20	− 3	10	− 2	13	−15	22	3	23	− 3	20	− 1	30	5	.....	.....	24	0	19	− 2
5....	− 8	−34	2	−28	− 5	−23	− 9	−19	4	−20	2	−19	− 9	−21	− 8	−17	− 3	− 9	10	− 8	8	− 7	38	−16	0	− 6	− 2	−20
6....	− 9	−33	11	−25	4	−25	3	−21	14	−25	− 4	−26	5	−24	0	−24	− 1	−20	− 4	−24	0	−18	40	−20	0	−16	− 3	−22
7....	7	−30	24	−18	19	−13	12	−14	21	−18	10	−27	19	−10	10	−22	10	−11	3	−20	11	−10	38	−17	− 1	−14	12	−19
8....	25	− 3	34	6	37	1	28	− 5	40	0	19	−18	32	4	19	−18	28	−12	33	− 9	27	−13	38	11	29	−12	31	− 3
9....	26	8	25	− 1	30	2	15	− 4	22	4	15	− 7	28	− 8	32	− 1	32	15	32	18	35	11	40	12	28	11	38	15
10....	10	− 6	0	− 7	4	− 9	− 4	−15	9	− 8	− 2	− 7	−4	−14	4	− 2	15	− 3	19	− 5	20	4	43	−11	11	− 2	15	− 4
11....	− 7	−11	− 5	−30	− 5	−29	−15	−29	− 4	−30	−14	−20	−14	−28	0	−17	− 3	−11	− 5	−19	5	−14	35	−22	− 2	−12	− 3	−17
12....	− 2	−16	− 8	−32	−11	−43	− 7	−37	− 8	−38	−11	−36	− 8	−35	5	−23	8	−14	− 3	−18	7	−17	25	−18	6	−15	− 2	−18
13....	3	−22	11	−29	4	−31	5	−24	8	−28	5	−33	12	−26	10	−18	9	−12	35	−17	7	−12	25	−19	32	−11	47	−17
14....	28	0	20	4	20	− 1	20	2	30	− 3	20	−17	20	1	35	−16	39	9	56	30	42	1	40	−12	47	19	55	28
15....	28	12	16	− 3	19	− 7	23	2	30	7	23	− 3	14	− 1	33	10	42	16	53	30	52	23	43	15	47	24	47	31
16....	10	− 1	5	− 4	18	− 2	15	− 1	19	0	17	− 2	13	− 9	30	7	48	11	56	10	56	19	43	0	50	8	50	4
17....	2	−17	− 1	−24	1	−20	− 1	−14	5	−18	20	−10	− 4	−22	10	− 5	11	− 2	10	− 7	40	4	38	− 8	9	− 1	12	− 1
18....	31	−10	25	−16	17	−15	12	−13	28	−12	12	−18	24	−11	20	−23	30	−10	54	− 4	43	10	40	−12	39	− 4	51	1
19....	− 7	−17	0	−24	14	−17	3	−16	27	−19	6	−22	− 9	−21	3	−16	28	− 6	32	0	40	3	42	−13	39	− 3	22	− 4
20....	8	−25	6	−30	− 2	−29	5	−23	6	−30	17	−28	10	−30	16	−25	7	−14	26	−15	10	−16	40	−24	20	−14	37	−11
21....	36	6	1	−36	26	− 5	25	1	30	4	11	−26	20	− 6	33	−22	38	7	39	18	41	2	37	−22	42	16	36	22
22....	27	10	28	− 4	30	− 4	30	5	30	10	23	−15	31	−11	30	− 2	48	17	45	24	49	18	38	11	38	25	45	22
23....	14	− 5	17	−24	20	−17	19	−11	20	−15	19	− 6	11	−18	9	− 9	22	1	40	10	39	13	29	12	32	13	37	14
24....	38	7	17	− 6	25	− 4	22	13	32	8	20	− 5	20	0	36	− 4	46	10	46	20	47	10	38	13	45	17	45	25
25....	47	32	41	2	40	− 1	41	11	40	21	37	− 2	39	8	45	1	56	20	48	22	58	32	38	15	57	37	55	31
26....	42	35	40	20	37	10	31	9	37	26	24	0	37	10	30	5	43	13	53	30	50	18	37	16	45	27	43	28
27....	41	28	41	28	37	22	36	14	39	24	13	3	36	26	29	21	45	15	43	24	45	20	48	19	45	27	48	26
28....	46	28	44	23	44	14	42	14	46	20	39	4	41	21	46	18	44	12	52	34	46	18	49	20	52	22	55	25
29....	46	28	37	27	41	23	38	24	41	25	29	10	34	24	45	10	55	26	60	24	57	26	50	22	55	32	56	28
30....	20	18	33	0	33	− 9	25	−15	33	− 1	23	18	24	−17	26	17	42	− 5	42	14	44	18	50	0	39	− 1	32	7
31....	11	3	5	−14	− 3	−26	− 7	−22	0	−25	.....	−22	− 3	−24	.....	−21	− 3	−16	14	−12	18	−16	.....	.....	1	−13	7	− 5
Mns..	21.2	1.4	19.2	−6.4	19.7	−7.5	16.7	−5.4	23.0	−3.2	15.5*	−9.6	17.2	−7.3	22.2*	−5.1	28.0	2.5	33.0	6.5	33.5	5.9	39.3*	−1.8*	30.1	7.0	32.5	7.0

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 6*—Continued.

Date.	South Dakota.						Colorado.				Nebraska.															
	Sioux Falls.		Watertown.§§		Yankton.		Denver.		Wray.		Alma.		Bridgeport.		Grand Island.§§		Hay Springs.		Hebron.		Lincoln.		North Platte.		Oakdale.		Omaha.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	50	25	42	21	49	27	38	21	40	25	50	17	41	19	51	32	37	18	49	28	48	32	45	22	49	27	43	32
2....	37	12	25	11	30	17	48	23	49	12	40	10	45	8	41	17	42	9	40	21	34	21	44	12	30	17	32	22
3....	33	9	25	11	36	24	58	40	50	32	50	24	52	38	46	31	42	28	44	22	43	24	45	25	38	21	40	21
4....	34	10	24	4	26	4	40	8	49	16	24	21	50	13	24	22	28	5	38	22	29	19	25	9	21	6	27	18
5....	20	− 5	− 4	−12	4	− 3	9	−16	16	− 1	22	0	21	− 3	− 2	− 2	7	− 6	22	4	22	3	9	− 3	6	− 8	21	2
6....	0	−13	0	−19	2	−11	− 8	−21	1	−18	0	− 7	7	−20	11	−10	5	−21	4	− 4	3	− 4	4	−14	− 4	−12	2	− 4
7....	10	− 3	11	−19	12	0	21	−18	9	−17	10	− 7	8	−26	8	3	35	−26	8	− 2	8	− 1	9	− 9	6	−12	7	0
8....	20	− 6	25	−12	23	− 5	41	12	37	−11	22	−24	40	−10	20	−10	35	−11	15	−25	14	−11	32	− 9	18	−20	14	− 3
9....	37	10	32	−11	27	11	44	14	42	− 2	22	5	38	0	26	6	32	7	29	2	28	8	30	3	22	2	26	8
10....	22	0	10	2	16	6	29	8	22	− 2	21	− 4	27	12	18	6	22	10	25	15	28	6	22	10	16	− 3	34	14
11....	3	− 8	− 2	−15	6	− 7	29	6	27	2	12	− 7	20	− 8	8	− 4	13	−15	15	− 1	15	− 7	12	− 1	2	−12	14	− 1
12....	7	−12	4	−18	8	−11	42	3	35	0	15	−16	42	0	12	− 6	35	−15	10	−15	12	−11	22	− 4	9	−17	8	− 6
13....	10	− 2	16	−18	10	− 4	41	22	29	2	12	− 4	31	5	16	− 2	35	−12	10	1	11	0	15	− 3	5	− 4	10	3
14....	33	0	31	−14	34	7	57	34	49	12	43	− 2	41	13	37	12	50	19	36	− 2	39	2	39	11	32	− 2	36	3
15....	48	14	43	11	48	19	55	38	42	19	50	12	54	15	49	17	51	22	45	29	45	31	53	17	46	12	45	35
16....	46	22	50	22	53	16	44	28	53	26	59	20	50	15	55	33	48	19	51	30	51	32	56	16	48	22	50	34
17....	38	− 5	10	− 1	24	6	40	28	42	19	50	12	38	17	36	15	32	15	42	19	42	18	42	15	30	10	36	17
18....	30	− 5	20	−15	40	0	57	27	55	17	48	2	57	11	44	12	54	11	43	13	39	9	49	14	38	0	33	10
19....	10	− 4	4	−15	41	0	46	21	41	26	24	20	48	13	24	22	30	7	40	23	41	13	32	16	25	3	36	14
20....	22	−10	21	−17	15	− 6	31	9	34	6	28	5	33	− 2	20	2	28	− 7	23	5	13	2	31	3	16	− 3	14	1
21....	43	19	33	−18	46	15	54	22	55	17	50	11	53	19	45	18	47	16	44	11	42	12	52	15	43	9	39	8
22....	40	7	41	12	41	19	51	29	43	16	46	12	49	11	42	17	48	18	48	17	46	25	42	14	38	13	43	24
23....	38	22	11	3	27	12	43	24	41	25	28	14	42	25	37	24	39	14	40	27	36	22	40	24	28	16	36	24
24....	47	28	40	− 3	48	15	50	26	50	24	51	8	47	15	48	21	[a]43	14	47	15	48	19	46	16	48	14	47	22
25....	55	31	50	9	58	33	55	33	60	24	60	23	54	28	59	28	54	24	59	27	62	32	58	24	59	31	58	33
26....	47	27	24	4	48	19	45	25	48	29	48	29	47	30	43	37	45	26	43	35	50	25	45	31	38	24	46	28
27....	46	11	36	4	50	20	53	25	50	20	55	12	50	13	50	25	45	19	51	22	52	24	50	19	49	19	50	26
28....	32	10	40	− 1	41	19	59	26	58	25	53	20	55	20	47	28	52	26	47	29	38	26	55	21	45	25	37	24
29....	55	25	44	4	60	31	57	37	65	20	68	20	60	20	62	29	57	25	65	28	63	32	65	21	59	24	59	32
30....	43	17	23	14	45	7	39	26	44	28	40	30	43	25	35	30	43	20	38	32	41	22	44	24	32	10	45	24
31....	17	−18	− 6	−19	7	−13	38	18	30	13	30	9	28	9	10	− 3	25	− 2	32	2	23	− 2	24	4	10	−10	24	− 4
Mns..	31.4	6.7	23.3	−3.1	31.5	8.6	42.1	18.6	40.8	13.0	36.5	8.8	42.5	10.5	33.0	14.5	37.4	8.3	35.6	13.9	34.4	13.6	36.7	10.7	29.1	6.5	32.6	14.9

Date.	Valentine, Nebr.		Iowa.						Kansas.										Missouri.							
			Clarinda.§§		Sibley.§§		Sioux City.		Colby.		Concordia.		Salina.		Topeka.		Wakeeney.		Columbia.		Kansas City.		St. Louis.		Unionville.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	41	22	47	20	47	25	49	30	43	23	49	31	52	29	49	34	46	23	56	31	50	36	55	35	50	26
2.....	38	7	31	12	25	14	31	18	46	12	40	20	43	19	40	24	44	15	38	24	37	25	46	28	30	24
3.....	36	19	42	17	31	11	35	20	60	25	52	39	56	22	50	27	59	24	42	20	49	25	41	25	29	17
4.....	21	0	25	9	27	7	24	12	52	16	40	19	42	27	34	20	42	20	36	21	37	19	38	22	25	15
5.....	0	−10	15	9	0	− 4	12	− 1	16	1	23	3	30	9	22	8	21	1	23	20	21	10	32	22	19	14
6.....	3	−19	5	− 2	1	−12	2	− 8	12	− 9	3	− 2	9	0	8	4	3	− 6	20	11	10	6	28	19	5	3
7.....	10	−13	10	0	8	−12	7	− 3	9	− 8	9	− 4	9	0	10	5	10	− 2	20	11	12	6	32	20	12	0
8.....	38	−11	13	−12	15	−11	13	−10	28	− 9	16	−13	15	−28	15	− 5	30	−12	24	9	20	1	25	16	10	− 1
9.....	34	10	26	−13	22	− 4	24	7	33	− 1	30	10	30	6	28	5	33	7	32	14	29	10	29	22	22	− 2
10.....	12	− 2	35	1	16	− 4	18	3	25	0	32	11	36	20	37	23	27	4	38	22	36	26	39	24	34	8
11.....	5	−12	7	3	4	− 6	8	− 5	21	0	14	− 3	22	5	23	2	18	− 1	38	8	36	5	40	15	23	22
12.....	27	−15	5	−15	6	−15	4	− 9	26	− 5	14	−10	19	−12	17	− 3	22	− 8	20	2	17	− 2	21	7	10	−10
13.....	28	−11	15	−15	11	−14	9	0	21	5	14	4	17	9	18	6	25	5	32	12	21	11	38	19	12	−12
14.....	44	22	39	− 7	26	− 3	29	3	45	10	40	3	40	− 4	42	3	49	4	43	11	44	8	40	18	38	− 6
15.....	56	26	47	1	49	11	43	26	48	22	50	34	58	36	59	40	64	30	56	42	57	42	53	34	48	3
16.....	57	10	53	30	43	18	47	21	54	30	55	40	56	36	58	44	63	33	60	50	60	48	60	51	55	36
17.....	44	1	35	21	24	3	23	10	47	19	45	24	52	27	53	32	58	23	59	35	56	32	60	55	42	32
18.....	46	1	35	10	31	− 8	30	2	51	20	45	18	49	17	41	22	50	18	38	26	42	22	56	36	36	20
19.....	41	− 3	41	10	15	− 9	35	6	44	28	41	18	46	29	48	23	44	25	64	35	52	27	64	35	28	22
20.....	29	−10	12	5	17	− 8	8	− 4	32	10	21	8	30	11	23	10	30	10	35	12	27	13	60	17	15	13
21.....	44	19	41	0	43	− 7	41	6	59	15	48	16	48	9	43	10	52	10	32	10	39	12	33	14	35	3
22.....	53	25	43	10	41	15	41	22	52	19	46	24	45	25	38	24	57	15	37	23	40	26	34	26	36	7
23.....	38	15	42	20	21	13	34	12	42	17	40	21	45	31	42	29	48	26	42	30	42	31	48	34	40	22
24.....	46	16	45	15	45	3	46	15	49	18	50	19	51	11	48	22	53	15	41	24	46	25	41	30	42	15
25.....	57	30	55	16	54	17	58	32	61	27	61	31	65	22	61	34	64	26	54	26	57	34	58	31	52	17
26.....	41	23	44	30	25	15	44	19	52	20	47	28	52	25	49	29	54	33	53	28	49	30	56	31	48	30
27.....	46	23	50	18	44	12	49	19	53	22	50	25	59	16	55	23	57	19	43	21	50	25	39	23	44	18
28.....	54	23	45	20	31	1	32	15	56	25	49	31	49	24	42	31	56	28	43	25	41	30	41	28	32	19
29.....	58	25	56	23	53	5	56	30	67	30	68	34	69	26	65	32	70	27	60	25	60	31	57	27	52	21
30.....	38	9	42	27	31	21	42	11	58	31	44	24	55	31	48	29	61	33	54	31	56	30	57	33	45	30
31.....	9	−14	9	2	7	−15	11	−12	35	15	25	5	38	12	29	6	35	14	31	4	30	4	33	8	16	15
Mns.....	35.3	6.7	32.3	8.5	26.2	1.9	29.2	9.3	41.8	13.8	37.6	16.4	41.5	15.8	38.5	19.1	43.4	14.8	40.8	21.4	39.3	20.9	43.7	26.0	31.8	13.6

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 7, LOWER MISSISSIPPI VALLEY.

ISAAC M. CLINE, District Editor.

GENERAL SUMMARY.

Unseasonably warm weather prevailed over the eastern and cold weather prevailed over the western portion of the district. The precipitation was frequent and heavy over the eastern portion of the district, and was generally light west of the ninety-sixth meridian. In Colorado, New Mexico, and Kansas the greater part of the monthly precipitation occurred during the first decade. In Texas and Oklahoma the greater part of the precipitation occurred between the 4th and 23d of the month.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

States and portions of States lying within District No. 7.	Mean temperature.	Departure from normal.	Mean precipitation.	Departure from normal.	Greatest precipitation in 24 hours.	Mean snowfall.	Number of days.				Prevailing wind direction.
							With 0.01 inch or more.	Clear.	Partly cloudy.	Cloudy.	
Colorado	25.2	−2.7	0.65	+0.04	1.20	9.2	4	19	6	6	w.
New Mexico	29.3	−5.7	0.27	−0.02	0.65	3.8	3	19	8	4	sw.
Texas	38.4	−0.2	1.69	+0.60	2.88	1.4	3	14	6	11	s.
Kansas	31.5	−0.1	0.50	−0.28	0.97	3.2	3	16	8	7	s.
Oklahoma	38.3	−0.3	1.37	−0.23	2.74	1.2	4	15	7	9	s.
Missouri	36.8	+2.1	7.01	+3.93	5.80	1.1	9	12	5	14	s.
Tennessee	44.2	+4.3	11.22	+6.56	4.57	T.	13	10	3	18	s.
Arkansas	44.0	+3.6	8.45	+4.34	5.70	0.6	10	12	7	12	sw.
Mississippi	51.1	+5.4	9.60	+4.43	4.85	T.	13	9	5	17	s.
Louisiana	55.7	+4.7	5.88	+1.68	4.10	T.	8	9	6	16	s.

TEMPERATURE.

Mean temperatures ranged from 2.1° to 5.4° above the normal in Louisiana and Arkansas and in the Missouri, Tennessee, and Mississippi areas; elsewhere there was a deficiency ranging from 0.1° to 5.7°. Below zero readings were reported generally over the Colorado, New Mexico, and Kansas areas and at most stations in Oklahoma and the Texas panhandle. Over other portions of the district the lowest temperature was above zero except at one station in the Missouri area and one station in Arkansas. The highest temperature recorded was 88° at Lake Charles, La., and the lowest, −37°, at Buena Vista, Colo. A minimum reading of −35° was recorded at Elizabethtown, N. Mex.

PRECIPITATION BY DRAINAGE AREAS.

Arkansas River and tributaries.—The precipitation was above the normal over the upper and lower portions of this drainage area and was generally deficient over Kansas and western Oklahoma. In Colorado the average from 33 stations was 0.63 inch, about 0.1 inch above the normal. Over those portions of the Arkansas Valley proper that lie in Kansas and Oklahoma the average from 44 stations was 0.91 inch, about the normal amount. In New Mexico the average from 41 stations in the Canadian Valley was 0.28 inch, about the normal amount. Over those portions of the Canadian Valley lying in Texas and Oklahoma the average from 32 stations was 1.13, about the normal amount. The amounts from 22 stations in the Cimarron Valley averaged 0.65 inch, about 0.3 inch below the normal. Over the Verdigris Valley the precipitation was light, the average from 11 stations being 0.77 inch, about half an inch below the normal. Over the Neosho Valley the average from 18 stations was 1.46 inches, about 0.3 inch above the normal. Below the Oklahoma-Arkansas line the precipitation over the Arkansas Valley proper was heavy, the average from 15 stations being 8.12 inches, about 4.5 inches above the normal.

Red River and tributaries.—The precipitation was unevenly distributed over this drainage area. The average from 47 stations in those portions of the Red River Valley that lie in Texas and Oklahoma was 1.70 inches, about half an inch above the normal. Below the Texas-Arkansas line the average from 20 stations was 6.25 inches, about 1.9 inches above the normal.

Mississippi River south of St. Louis and small tributaries.—Unusually heavy precipitation occurred over this drainage area. In the immediate Mississippi Valley the average from 38 stations was 9.90 inches, about 5 inches above the normal. The average from 25 stations in the Valley of the White was 7.86 inches, about 4.4 inches above the normal. Over the Yazoo Valley the average from 21 stations was 10.43 inches, about 5.7 inches above the normal. In the Valley of the Big Black the average was 7.58 inches, about 2.6 inches above the normal. In the Ouachita Valley the average from 21 stations was 7.67 inches, about 3.3 inches above the normal.

Louisiana coastal plain.—The precipitation was above the normal in this area, except at a few stations near the coast, the average from 35 stations being 5.70 inches, about 1.6 inches above the normal.

SNOWFALL.

Snow occurred generally over the Colorado, New Mexico, Kansas, and Missouri areas, and in northern Oklahoma, northwest Arkansas, and the Texas panhandle. Only a trace of snow fell in Louisiana, and in the Mississippi and Tennessee areas. About the normal snowfall for January occurred in the Colorado and New Mexico areas, except that there was slightly more than is usual in January over the upper Arkansas Valley. In the Colorado area much drifting resulted from the prevailing high winds which carried considerable snow from the open to the timber and gulches. The usual settling did not occur and the water content of the snow is relatively small.

RIVERS.

All rivers in Oklahoma continued below the normal, and no material changes were reported.

In Kansas the rivers remained low with but slight changes in stages during the month.

Two moderate rises occurred in the Arkansas River. The first rise began on January 6, and a navigable stage

was reached on the 11th for the first time in 54 days; the highest stage recorded was 16.1 feet on the 13th, and a navigable stage continued during the remainder of the month.

Damaging floods occurred in the White River from Batesville, Ark., southward to the mouth, and also in the Black River in Arkansas. The damage by floods in these rivers aggregated about $10,000.

No flood occurred in the Red River, but there was a sharp rise in the lower reaches of this stream toward the close of the month.

The Ouachita River at Camden rose from a stage of 8 feet on the 1st to 35.9 feet on the 17th, after which there was a steady fall. The lower Ouachita rose steadily after the 6th, when the gauge showed 6.3 feet and a stage of 28.4 feet was recorded at the close of the month.

The Mississippi River was above flood stage at the close of the month from Cairo to Arkansas City. At Memphis the flood stage was reached on the 24th, and the stage at the close of the month was 40.1 feet; Helena, the flood stage was reached on the 23d, and the stage at the close of the month was 47.6 feet; Arkansas City, the flood stage was reached on the 30th, and the stage at the close of the month was 47.8 feet. Stages at other stations at the close of the month were: Vicksburg, 44.3; Natchez, 42.6; Baton Rouge, 30.9; Donaldsonville, 23.9; and New Orleans, 14.8 feet.

The Atchafalaya was rising rapidly at the close of the month.

IRRIGATION BY PUMPING IN WESTERN KANSAS.

By F. D. COBURN, Secretary Kansas State Board of Agriculture.

Irrigation of the valleys in western Kansas by pumping, where water is near the surface, long since passed the experimental stage, and its possibilities are not yet fully realized, as each season sees some new development.

In the Arkansas River Valley from Garden City to Syracuse many pumping plants are in operation or being installed. Finney County alone has 50 or more plants, including a number on the upland, with capacity for irrigating approximately 6,500 acres. Kearny County has 40 plants, each of 1,000 gallons or more per minute, and Hamilton County has 8. These are all equipped with centrifugal pumps, and principally use gasoline or distillate engines for power. In addition and incidentally, it may be mentioned that considerable areas are also irrigated direct from the river or when water is available from that source and from reservoirs where flood waters are stored.

In the Arkansas River Valley the depth to water is only 8 to 10 and 15 feet. The main valley, 4 to 6 miles wide, bounded by sandy territory on the south and by the loamy uplands on the north, contains what is termed the "underflow," and here are the shallow wells. This so-called underflow has been developed sufficiently so that it is pretty well known what can be done with it.

The United States Sugar & Land Co., of Garden City, Kans., which controls extensive areas in that vicinity and owns and operates the beet-sugar mill there, has a novel central power station for pumping at Deerfield, in Kearny County, about 12 miles west of Garden City. They make a producer gas out of cheap residuum of oil, and have a 400-horsepower gas engine and a 350-kilowatt generator. The current developed by this generator is distributed over a transmission line 20 miles in length, and under this line the company has 14 pumping plants, with a capacity of 1,800 to 2,000 gallons per minute. About 3,500 acres are irrigated from this system. There is also a Government plant at Deerfield which generates electric power to run 23 plants. These are shallow wells in the valley, however.

While developing the underflow for irrigating the valley lands is important, the great significance of the later investigations is demonstrated here and there that the uplands can be profitably irrigated by pumping from deep-bored wells, as these lands comprise by far the greatest acreage.

Only one of these big upland wells was in commission during the crop season of 1911. This was the J. W. Lough well, about 12 miles southwest of Scott, in Scott County. From it were irrigated 180 acres, all that could be made ready in time for planting, but the owner estimates that the well will take care of 320 acres.

Mr. Lough's well meets the water-bearing sand and gravel at a depth of 60 feet and extends through about 70 feet of it. Owing to the abundant supply of water available he has planned to put down other wells in this deposit and operate them by electric power something after the fashion of the Deerfield method of the United States Sugar & Land Co., previously described.

The writer received a letter from Mr. Lough, in which he says:

> We now have two wells equipped with pumps and engines; both were thoroughly tested during the hot, dry months of July and August, 1911, by pumping day and night several days in succession, without lowering the water in the wells more than 12 or 14 feet.
>
> The source of the water supply is undoubtedly in the Rocky Mountains of Colorado; it has been tested in different ways, showing that it constantly flows eastward. To my certain knowledge there is no difference in the volume of this underflow, whether the rainfall be scant or heavy.
>
> The water is always clear, cold, soft, and pure, and healthful for the growing of all vegetation. This water is found in coarse sand and gravel and at different depths, say from 15 to 75 feet from the surface and in some cases more.

This well of Mr. Lough's is 130 feet deep, with 24-inch casing. The Niquette well, of practically the same depth and equipment, is at McCue, the first station east of Scott. Each of these wells, it is estimated, will irrigate 320 acres.

The United Well Works report that they have "put down some 20 irrigation wells here in western Kansas, of which a number are being successfully operated at the present time. The others are not yet outfitted with power. The prospect for the immediate future is very good."

In Sheridan, Sherman, Thomas, and Cheyenne, in the northwest; in Scott, in the central west; in Finney, Kearny, Hamilton, and Gray, through which courses the Arkansas River; in Meade, on the southern border; in Morton, in the extreme southwest corner, and in Stanton adjoining it on the north, are various irrigation projects, the water supply being artesian flow or from rivers, creeks, and wells.

The deeply driven upland wells, however, seem to promise by far the greatest possibilities, and these, with centrifugal pumps and powerful cheap-fuel engines, are helping to solve the problem of utilizing the underground waters to irrigate the high lands.

The developments and experiences of the past 18 months seem to demonstrate conclusively not only that the water is available in western Kansas in immense quantities from a sort of subterranean lake, as it were, but that it may be successfully and economically raised for irrigating quite extensive areas. As one westerner said: "It doesn't matter much what it costs to get the water up, if we can lift it in such quantities as we are now doing." And he was right, for its use is transforming land of otherwise questionable value for agriculture into most vaulable tracts of great productiveness.

TABLE 1.—*Climatological data for January, 1913. District No. 7, Lower Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Colorado.																				
Buena Vista	Chaffee	7,955	13	12.0	−13.6	38	3	− 37	6	41°	0.78	+ 0.53	0.50	12.0	4	17°	3°	6°	nw.	C. A. Short.
Calhan	El Paso	6,700	6	24.3	.....	55	3	− 28	6	40	0.25	.....	0.15	3.0	2	27	3	1	sw.	H. B. Rice.
Canon City	Fremont	5,343	25	32.6	− 2.3	62	28	− 21	6†	48	0.73	+ 0.35	0.60	11.5	3	25	3	3	n.	U. S. Weather Bureau.
Colorado Springs	El Paso	6,098	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Colorado College.
Cripple Creek	Teller	9,396	12	.....	.....	.....	.....	.....	.....	.....	0.18	− 0.14	0.08	2.5	3	.....	.....	.....	.....	F. G. Willis.
Cuchara Camps	Huerfano	8,200	4	.....	.....	.....	.....	.....	.....	.....	0.91	.....	0.69	11.5	4	24	4	3	sw.	George A. Mayes.
Eads	Kiowa	4,209	5	30.4	.....	51	26	5	6	27°	T.	.....	T.	T.	0	15	14	2	n.	Mrs. Mattie A. Kerr.
Fairview	Custer	9,500	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Elizabeth L. Grey.
Fremont Exper. Sta.	El Paso	8,850	3	21.8	.....	47	14†	− 23	6	38	0.95	.....	0.65	14.1	4	14	9	8	w.	U. S. Forest Service.
Garfield	Chaffee	9,510	3	.....	.....	.....	.....	.....	.....	.....	1.76	.....	0.49	28.5	11	19	4	8	w.	Lloyd N. Felton.
Hamps	Elbert	5,400	20	24.0	− 3.8	57	3†	− 26	7	49	0.29	+ 0.07	0.29	3.7	2	20	4	7	nw.	W. Hamp.
Hermit Lake	Custer	10,000	3	.....	.....	.....	.....	.....	.....	.....	2.72	.....	0.92	35.0	8	14	8	9	sw.	John E. Graham.
Hoehne (near)	Las Animas	5,700	21	31.5	0.0	65	27	− 18	6	59	0.41	+ 0.12	0.20	6.0	3	19	6	6	w.	S. W. De Busk.
Holly	Prowers	3,380	18	37.2	+ 4.8	68	29	− 12	8	50°	0.06	− 0.13	0.06	1.0	1	26	3	2	n.	Holly Sugar Co.
Lake Moraine	El Paso	10,265	19	18.2	− 4.0	44	25	− 24	7	41	0.48	− 0.30	0.21	8.0	4	14	12	5	sw.	Clyde C. McReynolds.
Lamar	Prowers	3,592	23	29.8	− 1.7	66	29	− 13	7	46	0.40	+ 0.19	0.20	4.0	2	18	10	3	ne.	J. T. Lawless.
Las Animas	Bent	3,899	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. M. Tague.
La Veta Pass	Costilla	9,000	3	.....	.....	.....	.....	.....	.....	.....	1.48	.....	1.20	20.2	2	21	6	4	.....	Clara M. Wright.
Leadville	Lake	10,248	17	11.2	− 5.9	39	14	− 29	6	45	1.28	+ 0.14	0.38	16.2	8	15	7	9	n.	U. S. Weather Bureau.
Limon (near)	Elbert	5,360	6	24.0	.....	56	29	− 30	6	49	0.34	.....	0.34	5.0	1	24	4	3	s.	F. L. Palmer.
Madrid	Las Animas	6,361	3	.....	.....	.....	.....	.....	.....	.....	0.15	.....	0.08	4.0	3	.....	.....	.....	.....	Thos. Sawers.
Marshall Pass	Saguache	10,846	10	.....	.....	.....	.....	.....	.....	.....	1.91	.....	0.78	23.0	7	9	8	14	.....	W. L. Williams.
Maxey	Baca	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.03	.....	0.02	0.5	2	18	9	4	sw.	L. H. Alberti.
Monument	El Paso	7,200	2	21.9	.....	60	1	− 33	6	67°	0.96	.....	0.58	11.3	4	22°	4°	2°	w.	U. S. Forest Service.
North Lake	Las Animas	8,700	21	.....	.....	.....	.....	.....	.....	.....	0.92	+ 0.01	0.64	10.5	5	23	2	6	nw.	James W. Ingmire.
Pueblo	Pueblo	4,734	25	29.0	− 0.1	63	25	− 25	7	46	0.31	− 0.04	0.21	6.2	4	22	6	3	nw.	U. S. Weather Bureau.
Rocky Ford (near)	Otero	4,177	24	28.8	− 0.8	65	3†	− 20	7	50	0.17	− 0.11	0.17	2.5	1	27	1	3	w.	P. K. Blinn.
St. Elmo	Chaffee	9,500	4	.....	.....	.....	.....	.....	.....	.....	1.24	.....	0.35	18.0	8	19	2	10	sw.	Daniel Clark.
Salida	do	7,035	14	23.8	− 5.1	52	28	− 30	7	46	0.80	+ 0.20	0.45	11.0	4	26	2	3	w.	M. D. L. Buell.
Santa Clara	Huerfano	8,252	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Lincoln G. Morris.
Sheridan Lake	Kiowa	4,065	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Howard Gamble.
Stonewall	Las Animas	8,000	8	.....	.....	.....	.....	.....	.....	.....	0.04	.....	0.04	0.4	1	15	0	16	w.	G. A. Storz.
Trinidad	do	5,994	18	31.7	− 3.2	61	3†	− 19	7	49	0.51	+ 0.02	0.40	6.5	4	17	9	5	w.	Walter Dearden.
Two Buttes	Baca	4,100	3	31.6	.....	66	29	− 12	6	51	0.35	.....	0.18	3.5	5	16	8	7	sw.	N. G. Jones.
Two Buttes Reservoir	do	4,250	.....	.....	.....	.....	.....	.....	.....	.....	0.28	.....	0.20	3.0	4	17	7	7	sw.	Walter J. Krohne.
Victor	Teller	10,100	8	19.0	.....	44	3	− 14	5	36	0.11	.....	0.10	3.0	2	22	6	3	w.	Fred Jones.
Vilas	Baca	3,935	23	.....	.....	.....	.....	.....	.....	.....	0.10	− 0.08	0.05	2.0	2	20	5	6	sw.	David Konkel.
Wayne	El Paso	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. Groff.
Westcliffe	Custer	7,864	20	20.4	− 5.2	50	28	− 32	7	50	0.45	− 0.14	0.45	8.0	1	14	10	7	sw.	Zack Jordan.
Winfield	Chaffee	9,765	4	.....	.....	.....	.....	.....	.....	.....	0.65	.....	0.16	15.4	12	14	5	12	w.	John G. Payne.
Woodman Sanatorium	El Paso	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Woodman Sanatorium.
Wortman	Lake	11,250	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George C. Wortman.
New Mexico.																				
Abbott	Mora	5,771	4	.....	.....	64	19	− 20	7†	.....	0.05	.....	0.02	0.8	3	19	9	3	s.	Agent E. P. & S. W. R. R.
Albert	Union	4,700	23	31.6	− 6.5	68	21	− 6	8	49	.....	.....	.....	.....	.....	.....	.....	.....	w.	Martin De Smet.
Aurora	Colfax	8,849	4	.....	.....	.....	.....	.....	.....	.....	0.29	.....	0.15	5.5	4	8	20	3	nw.	Miss J. Lucero.
Bell Ranch	San Miguel	4,500	14	30.8	− 7.4	69	3	− 20	8	55	0.31	+ 0.05	0.24	5.0	2	16	7	8	w.	C. M. O'Donel.
Black Lake	Colfax	8,348	4	.....	.....	.....	.....	.....	.....	.....	0.24	.....	0.15	3.6	5	14	16	1	w.	Ralph T. Martinez.
Cabeza	San Miguel	5,406	4	.....	.....	.....	.....	.....	.....	.....	0.19	.....	0.15	3.0	2	12	18	1	sw.	Agent E. P. & S. W. R. R.
Campana	do	4,493	4	33.6	.....	62	27	− 12	8	51	0.23	.....	0.12	4.0	2	23	5	3	sw.	Do.
Chacon	Mora	9,000	4	.....	.....	.....	.....	.....	.....	.....	0.63	.....	0.42	5.5	2	11	17	3	w.	Alfred Lucero.
Cimarron (near)	Colfax	6,385	9	28.2	.....	63	3	− 18	8	56	0.44	.....	0.24	5.0	2	17	9	5	e.	William French.
Clovis	Curry	4,129	2	35.0	.....	67	28	− 4	8	50	0.21	.....	0.20	3.5	2	28	0	3	sw.	John H. Barry.
Cuervo	Guadalupe	4,849	4	34.2	.....	58	19†	− 5	6	31	0.56	.....	0.56	7.0	2	23	0	8	sw.	Agent E. P. & S. W. R. R.
Dawson	Colfax	6,396	4	26.0	.....	58	19†	− 14	7	51	0.25	.....	0.20	4.2	4	13	16	2	nw.	Do.
Elizabethtown	do	8,465	8	15.4	.....	48	3	− 35	7	65	0.43	.....	0.30	8.5	3	20	6	5	w.	Miss M. Carrington.
Folsom	Union	6,399	13	28.2	− 2.6	61	3	− 18	7	51	0.32	− 0.08	0.12	4.0	4	23	4	4	n.	Davis Rope.
Fort Union	Mora	6,835	53	25.5	− 6.5	58	3	− 29	7	54	0.30	− 0.13	0.15	4.0	2	26	3	2	.....	M. C. Needham.
Hayden	Union	4,444	3	33.5	.....	64	3†	− 9	6	44	0.21	.....	0.10	5.0	3	12	16	3	sw.	James B. Dickson.
Hoosier Ranch	Mora	.....	2	.....	.....	.....	.....	.....	.....	.....	0.41	.....	0.23	5.5	3	19	9	3	sw.	W. H. Guthman.
Johnsons Park	Colfax	6,722	4	25.2	.....	62	3	− 17	7	57	0.05	.....	0.05	1.0	1	17	12	2	sw.	A. J. Meloche, jr.
Johnsons Ranch	Mora	5,784	1	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	T.	0	27	4	0	sw.	J. W. Johnson.
Kappus	Quay	4,010	2	.....	.....	.....	.....	.....	.....	.....	0.40	.....	0.40	3.0	2	.....	.....	.....	.....	Anthony Kappus.
Lake Alice	Colfax	7,160	4	.....	.....	.....	.....	.....	.....	.....	0.31	.....	0.19	4.0	5	.....	.....	.....	.....	Jesse Rickman.
Logan	Quay	3,851	7	33.0	.....	68	3†	− 18	8	57	0.15	.....	0.15	2.8	2	29	0	2	sw.	John B. Reneau.
Lykins (near)	Roosevelt	5,000	3	.....	.....	.....	.....	.....	.....	.....	0.29	.....	0.29	3.0	2	24	3	4	sw.	J. G. Buchanan.
Maxwell (near)	Colfax	5,894	6	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	1.5	2	.....	.....	.....	.....	Dan N. Jackson.
Melrose	Curry	4,400	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. B. M. Porter.
Miami Ranch	Colfax	6,000	5	27.4	.....	64	3	− 22	7†	55	0.32	.....	0.32	3.8	2	18	10	3	w.	Farmers Development Co.
Mills (near)	Mora	5,985	2	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.05	2.0	2	20	3	8	sw.	J. E. La Rue.
Montoya	Quay	4,335	4	.....	.....	.....	.....	.....	.....	.....	0.32	.....	0.24	5.0	2	23	2	6	w.	Agent E. P. & S. W. R. R.
Mount Dora (near)	Union	5,600	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Edwd. F. Grygla.
Nara Visa	Quay	4,225	6	33.2	.....	65	1†	− 15	8	46	0.47	.....	0.45	4.5	2	18	4	9	n.	Willard Belknap.
Palo Verde	Mora	5,880	2	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.11	5.0	3	16	13	2	sw.	G. R. Abernathy.
Pasamonte	Union	.....	4	.....	.....	.....	.....	.....	.....	.....	0.07	.....	0.07	1.0	1	23	3	5	w.	J. J. Heringa.
Pleasant View	Mora	.....	2	.....	.....	.....	.....	.....	.....	.....	0.04	.....	0.04	0.5	1	13	18	0	.....	R. W. Boulware.
Portales	Roosevelt	4,004	3	29.8	.....	60	3	− 12	8	42	0.25	.....	0.25	2.0	2	27	1	3	w.	Portales Irrigation Co.
Raton	Colfax	6,660	15	27.6	− 5.0	62	4	− 14	7	46	0.06	− 0.10	0.03	1.0	2	18	10	3	nw.	S. A. Wiseman.
Rociada	San Miguel	8,200	9	26.2	− 6.5	57	3	− 29	7	61	0.65	− 0.05	0.65	7.0	2	13	16	2	w.	John E. Dailey.
Rosebud	Union	4,500	2	.....	.....	.....	.....	.....	.....	.....	0.18	.....	0.10	2.7	2	.....	.....	.....	.....	H. A. Nachtrieb.
Roy	Mora	5,884	4	.....	.....	.....	.....	.....	.....	.....	0.55	.....	0.32	5.0	3	8	16	7	ne.	Agent E. P. & S. W. R. R.
Roy (near)	do	5,880	2	.....	.....	.....	.....	.....	.....	.....	0.41	.....	0.25	5.0	4	20	7	4	sw.	Baum Brothers.
St. Vrain (near)	Curry	4,300	1	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.30	3.0	1	.....	.....	.....	.....	S. A. Dow.
San Jon	Quay	4,200	6	34.4	.....	66	29	− 19	8	47	0.30	.....	0.25	5.0	3	20	8	3	sw.	Jesse T. White.
Solano	Mora	5,622	4	29.4	.....	65	3	− 14	7	46	0.24	.....	0.15	5.0	3	24	4	3	sw.	F. M. Hughes.
Springer	Colfax	5,857	21	25.6	− 6.1	59	3	− 21	7†	53	0.21	0.00	0.14	3.0	2	26	5	0	w.	Agent A. T. & S. F. R. R.
Taylor	do	5,661	4	30.2	.....	60	3†	− 10	7†	58	0.17	.....	0.07	2.5	3	24	0	7	.....	Agent E. P. & S. W. R. R.
Texico (near)	Roosevelt	4,038	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	2.0	2	.....	.....	.....	.....	A. L. King.
Trementina	San Miguel	5,000	5	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.10	6.0	2	17	10	4	sw.	Miss Alice Blake.
Tucumcari	Quay	4,194	9	36.5	− 5.1	69	3	− 7	8	43	0.28	+ 0.04	0.28	4.0	2	23	5	3	sw.	John F. Seaman.
Valley	Union	5,000	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Miss M. L. Payne.
Vance (near)	do	.....	2	.....	.....	.....	.....	.....	.....	.....	0.26	.....	0.20	4.0	3	21	7	3	sw.	C. E. Anderson.
Vermejo Park	Colfax	7,600	9	24.6	− 5.5	60	14	− 24	7	54	0.37	+ 0.03	0.30	6.0	2	19	6	6	nw.	H. W. Adams.
Wagon Mound (near)	Mora	6,300	4	26.6	.....	62	3	− 26	7	55	0.16	.....	0.10	2.0	2	16	9	6	sw.	Guy L. Barnes.

TABLE 1.—*Climatological data for January, 1913. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Texas.																				
Amarillo	Potter	3,676	21	35.0	+ 1.1	67	29	− 2	7	38	0.11	− 0.49	0.09	1.1	3	21	10	0	sw.	U. S. Weather Bureau.
Archer City	Archer		2								0.69		0.25	1.0	4	13*	6*	7*	nw.	Charles H. Thuman.
Arthur City	Lamar	590	21								1.50	− 1.11	0.60	0	4	9	0	22		C. A. Lowrey.
Bonham	Fannin	566	10	43.6		70	4	8	8	31	4.85		1.86	0	6	16	3	12	sw.	H. M. Norman.
Canadian	Hemphill	2,339	6								0.15		0.15	1.5	1					J. M. Shaw.
Childress	Childress	1,869	20								0.03	− 0.78	0.03	0.3	1	9	9	13	s.	George Baker.
Chillicothe	Hardeman	1,406	5								0.53		0.22	2.0	3					A. B. Connor.
Clarendon	Donley	2,719	8	36.6		70	3	− 1	8	51	0.00		0.00	0	0	11	13	7	sw.	Whitfield Carhart.
Clarksville	Red River	442	13	44.4‖	+ 0.4	71	1†	12	8	43‖	6.45	+ 1.93		0	5	13	3	15		J. W. O'Neill.
Claude	Armstrong	3,397	8								0.06		0.06	T.	1					Ft. W. & D. C. Ry.
Dalhart	Dallam	3,998	8	29.1		68	3	− 12	8	57	0.06		0.06	0.6	1					W. D. Griggs.
Denison	Grayson		13								3.50	+ 1.72	0.90	0	11	12	0	19	n.	J. L. Wilson.
Finley	Bowie		3								4.30		1.70	0	6	17	0	14	s.	Robert L. Smith.
Henrietta	Clay	915	21	42.0	+ 0.3	78	1	5	8	60	0.87	− 0.32	0.52	1.0	4	13	1	17	n.	C. K. Brown.
Memphis	Hall	2,067	8	44.8		69	17†	10	6†	34	0.10		0.10	1.0	1	7	3	21	ne.	Ft. W. & D. C. Ry.
Miami	Roberts	2,743	7	38.3		70	19	− 3	8	41	0.32		0.30	3.2	2	16	12	3	s.	J. E. Kinney.
Ochiltree	Ochiltree		5								0.20		0.20	3.0	1					S. J. Allen.
Panhandle	Carson	3,450	4																	J. Sid O'Keefe.
Paris	Lamar	592	24	42.8	− 2.3	70	4	10	8†	38	6.02	+ 3.95	2.88	0.3	9	10	6	15	s.	Robert A. Miller.
Plemons	Hutchinson		6	33.4		69	29	− 14	8	53	0.71		0.39	7.0	2	19	6	6	s.	C. S. Solomon.
Quanah	Hardeman	1,563	11	41.2		79	28	4	8	46	0.30	− 0.29	0.30	0	1	18	2	11	s.	William H. Crawford.
Ringo Crossing	Hopkins		3								5.46		2.60	0	8	12	3	16	nw.	H. J. Palmer.
Romero	Hartley	4,056	3	33.5		67	29	− 15	8	46	0.45		0.45	4.5	1	18	4	9	n.	R. S. Chamberlain.
Sherman	Grayson	745	20	44.2	− 0.1	70	17	11	8	29	3.35	+ 1.64	1.23	T.	7	13	2	16	n.	R. A. Gibbs.
Stratford	Sherman	3,699	1	31.6		70	2	− 6	7	46	0.40		0.30	4.0	2	19	5	7	n.	J. W. Elliott.
Tulia	Swisher	3,501	15	36.1	− 0.9	68	3	− 10	8	48	0.40	− 0.30	0.20	3.0	3	12	16	3	s.	Lou Mulhall.
Wellington	Collingsworth		1								0.10		0.10	1.0	1					J. D. Camp.
Wichita Falls	Wichita	958	21																	E. F. Mittman.
Winfield	Titus		3								4.69		2.20	0	6	8	14	9	sw.	J. B. Newberry.
Kansas.																				
Alden	Rice	1,684	3								0.28		0.14	5.0	2	18	7	6	s.	Geo. Klady.
Anthony	Harper	1,329	16	33.6		68	17†	− 12	8	39	0.20	− 0.42	0.15	1.5	2	14	11	6	sw.	R. H. Beebe.
Ashland	Clark	1,951	25	31.2	− 2.1	72	29	− 16	8	51	0.27	− 0.24	0.15	2.5	4	14	12	5	s.	C. W. Carson.
Burlington	Coffey	1,010	20	30.8	− 0.6	62	29	− 3	9†	43	0.51	− 0.51	0.24	3.5	3	1	22	8	s.	O. E. Sanford.
Chanute	Neosho	940	9	32.6		69	17	− 3	8	33	1.18		0.42	1.5	6	6	17	8	nw.	C. W. Brown.
Cimarron	Gray	2,700	1	26.2		70	29	− 18	8	54	0.40		0.30	4.0	2	18	0	5	s.	C. C. Isely.
Coffeyville	Montgomery	747	3			68	17†				1.16		0.38	1.0	6	11	4	16	s.	A. F. Briggs.
Coldwater	Comanche	2,090	16	32.6	− 0.4	69	29	− 15	8	44	0.10	− 0.69	0.05	2.0	2	19	6	6	s.	J. L. Stanley.
Columbus	Cherokee	898	23	34.4	+ 1.3	67	19	− 2	8	40	2.08	+ 0.13	0.97	1.2	7	16	5	10	sw.	O. E. Skinner.
Coolidge	Hamilton	3,348	16	27.1	− 2.5	69	3	− 19	8	60	0.20	− 0.02	0.20	2.0	1	18	7	6	nw.	W. R. Padley.
Cottonwood Falls	Chase	1,234	9	30.6		64	29	− 18	8	43	0.15		0.10	1.5	2	15	9	7	n.	E. B. Greene.
Council Grove	Morris	1,234	4	29.2		65	29	− 19	8	42	0.09		0.03	5.0	3	13	14	4	s.	J. P. Blackledge.
Cunningham	Kingman	1,680	29	31.3	− 1.3	70	3	− 16	8	45	0.30	− 0.36	0.30	3.0	1	16	10	5	s.	W. H. Morton.
Dodge City	Ford	2,513	39	29.4	+ 2.1	69	29	− 14	8	44	0.28	− 0.19	0.21	5.0	3	16	9	6	s.	U. S. Weather Bureau.
El Dorado	Butler	1,291	11	31.5		62	29	− 15	8	37	0.29		0.13	1.8	4	22	3	6	s.	W. Y. Miller.
Ellinwood	Barton	1,790	38	30.4	− 0.2	69	29	− 25	8	48	0.26	− 0.50	0.19	4.5	2	9	17	5	s.	Martin Musil.
Emporia	Lyon	1,138	32	30.9	+ 2.6	64	29	− 10	8	38	0.37	− 0.31	0.25	5.0	2	15	9	7	sw.	W. H. Boyles.
Eureka	Greenwood	1,079	17								0.53	− 0.42	0.50	3.0	3	16	7	8	nw.	Mrs. T. C. Peffer.
Fall River	do	925	17	33.0	− 0.9	65	19†	− 10	8	40	0.65	− 0.36	0.35	1.0	5	20	5	6	n.	J. McDaniel.
Fargo	Seward		3								0.40		0.30	4.0	2	23	5	3	s.	N. B. Swink.
Fredonia	Wilson	975	10	33.6		66	17†	− 5	8	40	0.74		0.26	1.0	7	19	3	9	s.	B. W. Holmes.
Garden City	Finney	2,836	24	28.8	− 1.8	68	29	− 18	8	52	0.15	− 0.17	0.15	2.0	1	22	3	6	s.	B. F. Stocks.
Great Bend	Barton	1,850	4								0.09		0.05	5.5	2	15	8	8	s.	I. Pritchard.
Greensburg	Kiowa	2,235	6	32.0		66	29	− 10	8	42	0.20		0.10	1.0	2	23	3	5	n.	C. C. Raymond.
Grenola	Elk	1,116	25	32.9	+ 0.7	66	29	− 10	8	40	0.73	− 0.50	0.31	1.5	4	13	12	6	sw.	W. H. Lawyer.
Hess	Gray		7																	Harry Jaques.
Howard	Elk	1,112	6	32.4		65	29	− 8	8	36	0.73		0.35	1.0	4	20	3	8	n.	J. W. Eby.
Hutchinson	Reno	1,535	23	29.6	+ 1.5	62	25	− 20	7	38	0.75	+ 0.15	0.75	5.0	1	18	4	9	n.	Sheridan Ploughe.
Independence	Montgomery	800	39	35.2	− 0.4	68	19	− 5	8	39	1.25	− 0.31	0.31	1.1	8	16	5	10	s.	F. L. Kenoyer.
Iola	Allen	984	7	30.6	+ 3.0	63	19	− 3	8	87	0.85	− 0.13	0.32	1.0	7	13	9	9	s.	U. S. Weather Bureau.
Irene	Hamilton	3,440	3	28.8		68	29	− 17	8	56	0.15		0.10	1.5	2	17	9	5		N. M. Herbig.
Jetmore	Hodgeman	2,268	12	28.8	− 1.8	70	29	− 14	8	54	0.16	− 0.16	0.12	7.0	3	14	11	6	sw.	James Aikin.
Kingman	Kingman	1,504	5	32.0		64	29†	− 17	8	41	0.54		0.54	7.0	1	14	13	4	nw.	B. B. Anawalt.
La Crosse	Rush	2,061	11			70	29	− 19	8	45	0.08	− 0.15	0.08	1.0	1	14	8	6	nw.	Rodney Torrey.
Lakin	Kearney	2,993	23	28.4	− 1.8	67	29	− 10	8	51	0.17	− 0.10	0.17	2.0	1	22	3	6	sw.	C. H. Longstreth.
Larned	Pawnee	2,090	28	29.9		69	29	− 16	8	46	0.32	+ 0.06	0.20	3.2	3	18	7	6	n.	H. H. Wolcott.
Lebo	Coffey	1,138	27	28.8	− 0.2	62	29	− 11	8	38	0.46	− 0.66	0.25	3.5	4	15	10	6	s.	J. J. Bowman.
Le Roy	do	990	4								0.66		0.21	0.2	6	13	2	16	n.	F. W. Schmitt.
Liberal	Seward	2,843	6	34.1		70	29	− 11	8	51	0.30		0.20	3.0	2	19	0	12	n.	R. R. T. Nichols.
Macksville	Stafford	2,032	24	30.4	− 0.2	67	29	− 19	8	46	0.70	+ 0.08	0.16	7.0	2	19	7	5	nw.	Mrs. Nelia Poling.
McPherson	McPherson	1,495	24	29.0	− 0.5	64	29	− 18	8	38	0.92	+ 0.12	0.80	9.0	3	20	5	6	sw.	Ed. F. Haberlein.
Madison	Greenwood	1,074	12			61	16	− 18	8	49‖	0.40	− 0.60	0.20	4.0	2	8‖	9‖	4‖	nw.	C. A. David.
Marion	Marion	1,310	20	30.0	− 1.2	65	29	− 20	8	41	0.33	− 0.30	0.30	7.5	2	12	14	5	n.	Jerry Forney.
Medicine Lodge	Barber	1,259	20	31.5	− 1.7	69	29	− 18	8	47	0.14	− 0.28	0.14	3.0	1	18	10	3	s.	S. P. Garrison.
Medora	Reno	1,484	4																	M. L. Rickenbrode.
Minneola	Clark	2,558	1								0.40			4.0		18	6	1	sw.	A. P. Reece.
Mount Hope	Sedgwick	1,410	16								0.20	− 0.47	0.20	3.0	1	15	9	7	n.	H. N. Renfrew.
Neosho Rapids	Lyon	1,092	8								0.16		0.10	0.5	2	18	5	8	nw.	W. H. McMullin.
Ness City	Ness	2,260	20								0.25	− 0.17	0.15	3.0	2					J. K. Barnd.
Newton	Harvey	1,454	16	31.0	− 0.4	63	29	− 17	8	43	0.29	− 0.37	0.27	4.0	2	20	5	6	sw.	H. A. Brush.
Norwich	Kingman	1,496	17	33.4	− 0.1	66	30	− 11	8	41	0.38	− 0.20	0.30	3.5	2	14	12	5	sw.	N. I. Farris.
Oswego	Labette	899	19	34.6	− 0.2	68	17†	− 3	8	43	1.57	− 0.14	0.45	2.0	5	15	6	10	sw.	Jas. M. Currigan.
Plains	Meade	2,766	3	31.8		69	29	− 13	8	49	0.30		0.20	3.0	2	17	10	4		E. J. Henning.
Pratt	Pratt	1,950	18	32.4	+ 0.6	66	29	− 12	8	41	0.40	− 0.21	0.30	4.0	2	14	9	8	n.	T. J. Arnold.
Richfield	Morton		2	32.3	− 0.7	70	29	− 15	8	49	0.50	+ 0.05	0.20	3.0	4					M. J. Allen.
Rome	Sumner	1,218	27	33.4	0	66	29	− 16	8	38	0.34	− 0.64	0.21	3.5	4	19	6	6	n.	D. M. Adams.
Sedan	Chautauqua	834	28	34.6	+ 1.1	68	29	− 8	8	38	1.09	− 0.30	0.33	4.8	6	20	4	7	s.	A. Y. Buckles.
Toronto	Woodson	1,040	16	31.5	− 0.3	68	29	− 11	8	42	0.57	− 0.53	0.32	2.0	3	15	6	10	n.	M. A. Webb.
Ulysses	Grant	3,050	22	33.6	+ 1.9	70	29	− 19	8	52	0.35	− 0.01	0.20	3.5	3	17	10	4	nw.	T. W. Marshall.
Walnut	Crawford	940	11	34.8	+ 1.8	67	29	− 4	12	34	1.37	− 0.27	0.39	2.0	6	17	8	6	sw.	R. C. Harlan.
Wellington	Sumner	1,225	17	33.8	+ 0.1	65	29†	− 19	8	41	0.40	− 0.33	0.26	4.5	4	20	5	6	s.	E. O. G. Kelly.
Wichita	Sedgwick	1,377	26	30.6	+ 0.9	60	29	− 10	8	37	0.41	− 0.36	0.37	6.5	5	13	11	7	s.	U. S. Weather Bureau.
Winfield	Cowley	1,124	19	33.0	+ 0.4	61	15†	− 12	8	37	0.64	− 0.37	0.40	2.0	3	21	2	8	n.	M. B. Light.
Yates Center	Woodson	1,068	34	29.7	− 1.1	64	29	− 12	8	40	0.68	− 0.72	0.25	2.0	6	14	11	6	s.	J. W. Tipton.

TABLE 1.—*Climatological data for January, 1913. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	
Oklahoma.																			
Ada	Pontotoc	1,001	5	40.5	.....	73	17	3	8	38	1.87	.....	0.77	1.0	8	.....	.....	.....	n.	W. S. Creveling.
Alva	Woods	1,350	8	35.2	.....	72	29	− 12	8	44	0.20	.....	0.10	1.5	3	15	12	4	n.	S. A. Stech.
Apache	Caddo	1,255	3	38.2	.....	73	17	− 2	8	39	0.60	.....	0.37	0.5	4	20	4	7	n.	G. D. Teeter.
Arapaho	Custer	1,575	19	37.2	+ 1.0	71	17	− 3	8	45	T.	− 0.93	T.	T.	0	19	4	8	s.	J. C. Brower.
Ardmore	Carter	872	11	42.0	− 0.3	74	17	− 4	8	38	1.94	+ 0.57	0.94	0	5	12	7	12	s.	H. T. Nisbett.
Bartlesville	Washington	687	5	36.9	.....	73	19	− 2	8	34	1.22	.....	0.30	2.0	6	14	7	10	nw.	Dr. A. P. Owens.
Blackburn	Pawnee	800	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Bertha Parks.
Cache	Comanche	1,350	7	37.8*	.....	71	....	− 2	....	44	0.60	.....	0.60	0	1	14	6	6	n.	Mrs. Frank Rush.
Calvin	Hughes	713	8	.....	.....	.....	.....	.....	.....	.....	2.35	.....	0.84	1.0	7	15	0	16	n.	Thomas Purcell.
Chandler	Lincoln	865	11	39.6†	+ 0.8	73	....	3	....	42	0.92	− 0.26	0.82	0	2	10	5	10	s.	Chas. L. Kern.
Chattanooga	Comanche	1,150	7	38.8	.....	72	17	− 1	8	46	0.66	.....	0.31	0	3	14	5	12	se.	Squire Humble.
Cloud Chief	Washita	1,400	11	38.1	− 2.3	72	17	− 5	8	42	0.14	− 0.36	0.09	0.9	2	14	11	6	s.	J. C. Good.
Crawford	Roger Mills	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Stutzman.
Durant	Bryan	643	11	40.7	− 1.0	71	17	7	8†	37	4.20	+ 2.76	1.73	T.	8	15	8	8	n.	W. W. Blackburn.
Eldorado	Jackson	1,456	6	39.8	.....	75	1†	0	8	46	0.26	.....	0.11	T.	3	17	11	3	n.	Nelson Houk.
Elk City	Beckham	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. W. Lanham.
El Reno	Canadian	1,400	21	38.4	+ 2.0	70	....	− 1	....	38[b]	0.46	− 0.74	0.22	0.6	4	19[b]	1	9[b]	n.	R. J. Carlile.
Enid	Garfield	1,269	11	34.4	− 1.6	70	17	− 5	8	41	0.42	− 1.06	0.15	1.5	5	16	10	5	n.	Rose E. Walker.
Erick	Beckham	2,058	8	37.9	.....	71	....	− 4	....	49[a]	0.12	.....	0.06	T.	2	16[a]	10[a]	4[a]	s.	Uri B. Worcester.
Eufaula	McIntosh	566	....	42.1	.....	71	....	0	....	39[b]	3.40	.....	1.06	0	7	14[b]	4[b]	11[b]	s.	A. W. Hanes.
Fairland	Ottawa	839	13	38.2	+ 0.3	70	17†	0	8	40	2.84	+ 0.92	1.05	1.0	9	13	6	12	s.	R. Uhl Brown.
Fort Gibson	Muskogee	556	8	.....	.....	.....	.....	.....	.....	.....	2.60	.....	0.78	1.0	9	16	0	15	s.	C. W. Prier.
Frederick	Tillman	1,293	6	40.2	.....	75	17	− 1	8	39	0.56	.....	0.30	0.5	4	17	4	10	se.	John T. Welsh.
Geary	Blaine	1,546	1	37.5	.....	70	17	0	8	40	0.33	.....	0.11	0.8	4	15	8	8	sw.	B. B. Bradley.
Goodwell	Texas	3,300	2	34.8	.....	67	3†	− 10	8	50	0.45	.....	0.40	4.5	2	23	0	8	s.	O. P. Ruth.
Guthrie	Logan	1,000	20	38.1	+ 0.2	73	17	− 5	8	40	0.90	− 0.21	0.40	T.	3	18	2	11	s.	S. W. Black.
Guymon	Texas	3,133	3	.....	.....	.....	.....	.....	.....	.....	1.30	.....	1.10	9.0	2	23	3	5	s.	S. E. Snyder.
Hartshorne	Pittsburg	700	14	43.4	+ 1.0	67	5†	5	8	40	4.72	+ 2.99	2.00	0.2	5	18	2	11	n.	A. L. Mordt.
Healdton	Carter	900	19	40.6	− 0.9	75	18	− 7	8	50	1.54	− 0.01	0.97	T.	3	10	14	7	n.	Frank Webber.
Helena	Alfalfa	1,396	5	35.5	.....	70	29	− 7	8	41	0.05	.....	0.05	0.5	1	15	10	6	s.	C. H. Heald.
Hennessey	Kingfisher	1,166	18	39.6	+ 1.4	72	17	4	7†	44	0.55	− 0.55	0.38	1.0	3	14	3	14	s.	J. G. McCall.
Hobart	Kiowa	1,396	10	39.0	.....	72	17	− 2	8	41	0.32	.....	0.12	0.6	4	10	14	7	s.	Mrs. M. C. Parks.
Holdenville	Hughes	900	12	40.2	+ 0.1	72	17	4	8	37	2.06	+ 0.20	0.83	T.	5	15	8	8	s.	J. M. Pate.
Hooker	Texas	3,038	7	31.6	.....	70	29	− 18	7	53	0.30	.....	0.20	3.0	2	14	2	15	n.	Eula L. Rutherford.
Hugo	Choctaw	.....	.....	42.4	.....	68	4	10	7	34	5.83	.....	2.74	T.	6	17	5	9	n.	H. N. Kelly.
Hurley	Cimarron	4,200	5	33.8	.....	68	29	− 15	8	53	0.60	.....	0.40	6.0	2	5	21	5	sw.	G. C. Montgomery.
Idabel	McCurtain	474	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. C. W. Meyers.
Jefferson	Grant	1,062	19	33.1	− 2.2	70	29	− 16	8	42	0.50	− 0.40	0.34	2.0	2	20	2	9	s.	M. L. Henderson.
Kenton	Cimarron	4,000	12	33.3	− 2.8	68	3	− 14	8	52	0.50	+ 0.25	0.20	5.0	4	18	6	7	sw.	T. E. Beck.
Kingfisher	Kingfisher	1,046	16	38.1	− 0.6	72	17	− 6	8	42	0.55	− 0.49	0.29	0.5	6	14	11	6	s.	Wm. H. Guy.
Lawton	Comanche	1,111	....	38.9	.....	73	17	0	7	40	1.07	.....	0.57	0.5	4	16	6	9	s.	J. C. Cross.
Lawtonka Lake	....do	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.60	.....	0.40	0	2	.....	.....	.....	.....	F. C. Davis.
McAlester	Pittsburg	698	16	43.0	.....	72	17	5	8	37	3.75	+ 1.62	1.28	1.0	8	12	3	16	s.	W. F. Stuart.
Mangum	Greer	1,585	20	37.8	− 2.9	74	....	1	....	38[a]	0.03	− 0.86	0.03	T.	1	19[a]	6[a]	5[a]	se.	Wm. Noble.
Marlow	Stephens	1,292	12	40.1	+ 0.2	72	17	2	8	49	1.75	+ 0.78	1.10	T.	3	19	4	8	n.	F. D. Dodson.
May	Harper	.....	1	35.0	.....	.....	.....	− 23	8	66	0.20	.....	0.20	2.0	1	24	0	7	n.	Wm. B. Anthony.
Meeker	Lincoln	1,030	19	36.4	− 1.4	69	29†	4	7	44	1.90	+ 0.31	0.80	6.0	3	21	5	5	n.	G. C. Gray.
Muskogee(1)	Muskogee	617	....	38.0	.....	72	18	6	8	....	2.25	.....	0.82	2.0	10	16	3	12	n.	Dr. J. H. Baugh.
Muskogee(2)	....do	614	14	40.0	+ 0.8	71	17	5	8	35	2.50	+ 0.94	1.22	0.5	6	18	0	13	n.	U. S. Weather Bureau.
Mutual	Woodward	.....	5	35.0	.....	70	17†	− 12	8	49	0.00	.....	0.00	0	0	18	7	6	s.	J. Harry Randall.
Neola	Caddo	1,500	7	38.8	.....	72	17	0	8	40	0.46	.....	0.33	0.2	3	13	12	6	n.	Thomas Martin.
Newkirk	Kay	1,149	15	36.0	+ 0.2	66	29	− 9	8	36	0.43	− 0.96	0.25	2.5	4	17	7	7	s.	R. N. Schooling.
Norman	Cleveland	1,171	18	37.7	− 1.1	72	17	− 2	8	36	1.11	+ 0.05	0.41	1.0	4	14	8	9	n.	P. H. Albright & Co.
North Muskogee	Muskogee	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.46	.....	1.35	1.0	7	17	1	13	n.	S. E. Boyd.
Oakwood	Dewey	1,854	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. E. Walker.
Okeene	Blaine	1,194	8	37.2	.....	72	17	− 9	8	40	0.28	.....	0.17	1.0	3	18	8	5	n.	Dr. F. P. Osborn.
Okemah	Okfuskee	.....	1	41.0	.....	72	20	1	8	47	1.65	.....	1.00	0	3	14	4	13	s.	Dr. L. H. Murdoch.
Oklahoma	Oklahoma	1,247	23	37.0	+ 2.3	71	17	2	8	44	0.56	− 0.78	0.34	0.9	5	14	7	10	s.	S. F. Smith.
Okmulgee	Okmulgee	752	8	42.6	.....	77	19	1	8	44	2.40	.....	1.25	2.5	3	14	8	9	s.	U. S. Weather Bureau.
Pauls Valley	Garvin	880	12	40.3	− 1.1	73	17	− 1	8	41	1.80	+ 0.74	0.85	0	4	21	7	3	s.	J. L. Maynard.
Pawhuska	Osage	918	12	38.5	+ 0.6	....	....	5	12	43	1.69	+ 0.19	0.73	1.2	5	18	6	7	n.	A. M. Foss.
Perry	Noble	920	14	37.4	+ 0.1	70	17	− 5	7†	36	0.62	− 0.41	0.30	1.0	6	20	5	6	s.	R. C. Block.
Rankin	Rogers Mills	2,200	9	35.7	.....	68	29	− 6	8	43	0.19	.....	0.10	0.5	3	19	7	5	sw.	S. E. Laird.
Ravia	Johnston	796	10	44.4	.....	74	17	4	8	51	3.01	.....	1.10	0	6	20	0	11	s.	Roy Kagay
Sac and Fox Agency	Lincoln	900	19	39.8	− 0.1	73	17	− 4	8	41	1.20	+ 0.40	0.65	1.0	4	6	14	11	nw.	R. G. Guptill.
Shawnee	Pottawatomie	1,041	11	36.2	− 3.5	72	17	− 2	8†	46	1.32	+ 0.20	0.59	0.5	4	11	10	10	nw.	Thos. P. Myers.
Snyder	Kiowa	1,356	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Kate Chatman.
Stillwater	Payne	880	20	37.4	+ 0.3	73	17	− 4	8	43	0.56	− 0.63	0.15	1.0	5	16	8	7	s.	Dr. W. C. Woodard.
Tulsa	Tulsa	700	24	37.0	.....	72	17	− 2	8	34	1.60	− 0.10	0.63	1.5	7	15	11	5	s.	Will P. Watson.
Vinita	Craig	698	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. H. M. Hutchinson.
Wagoner	Wagoner	588	16	39.6	+ 1.9	72	17	1	8	39	4.75	+ 2.53	1.55	2.0	5	15	5	11	n.	Insane Hospital.
Waukomis	Garfield	1,258	16	35.8	− 2.0	71	17	− 5	8	40	0.49	− 0.48	0.26	T.	3	15	12	4	s.	Moro Hatfield.
Waurika	Jefferson	988	2	40.9	.....	73	17	3	8	38	1.02	.....	0.53	0.5	5	13	7	11	n.	R. C. Shades.
Weatherford	Custer	1,639	11	36.6	− 1.3	70	17	− 1	8	37	0.74	− 0.02	0.28	1.5	5	12	13	6	sw.	B. A. Swindler.
Webbers Falls	Muskogee	479	14	40.8	+ 0.4	71	17†	11	7	42	4.00	+ 2.16	2.00	0	4	3	19	9	sw.	Eugene Forbes.
Whiteagle	Kay	945	9	36.6	.....	70	17†	− 6	8	41	0.81	.....	0.34	0.2	4	22	2	7	s.	B. D. Boulineau.
Woodward	Woodward	1,893	10	34.8	.....	72	29	− 13	8	45	0.40	.....	0.40	4.0	1	17	11	3	n.	John F. De Jarnette.
Wyandotte	Ottawa	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.70	.....	1.20	0	3	16	1	14	s.	R. A. Boyle.
Missouri.																				Henry Hicks.
Belle	Maries	.....	22	31.0†	− 1.0	60	19	5	12	30	2.80	+ 0.57	0.90	T.	4	5†	7†	13†	nw.	A. J. Wofford.
Birchtree	Shannon	1,200	20	36.0	+ 1.4	65	19	9	12	36	7.48	+ 5.01	1.70	3.0	10	14	1	16	s.	V. H. Kirkendall.
Cape Girardeau	Cape Girardeau	346	8	.....	.....	.....	.....	.....	.....	.....	12.01	.....	3.20	1.0	17	9	11	11	s.	D. L. Albert.
Cardwell	Dunklin	.....	2	41.8	.....	66	5†	18	8	40	15.60	.....	5.80	0	11	14	6	11	sw.	E. M. Perry.
Caruthersville	Pemiscot	.....	23	43.1	+ 4.4	68	5	18	8	33	15.12	+11.14	4.12	T.	10	13	3	15	se.	H. E. Averill.
Cassville	Barry	.....	3	36.8	.....	69	19	3	8	44	2.41	.....	0.84	0.2	9	16	7	8	s.	Mrs. Zuma Bloomer.
Dean	McDonald	.....	15	36.8	− 0.3	69	17†	− 1	8	44	3.45	+ 1.63	1.56	1.0	5	19	1	11	sw.	H. E. Dean.
Doniphan	Ripley	440	9	38.7	.....	63	19	15	8†	33	8.18	.....	2.10	0	10	13	4	14	ne.	W. W. Martin.
Gano	Dent	.....	10	35.4	+ 1.6	68	19	5	12	37	4.97	+ 1.94	1.92	1.0	10	11	6	14	nw.	A. C. Leech.
Goodland	Iron	900	9	35.4	.....	67	19	7	12	42	5.72	.....	2.40	2.0	7	11	3	17	n.	F. M. Adams.
Hollister	Taney	1,000	4	38.8	.....	72	30	10	12†	44	4.46	.....	1.00	2.0	9	17	0	14	ne.	W. P. Chapmann.
Ironton	Iron	925	36	35.4	+ 3.1	66	19	8	12	40	7.48	+ 4.47	1.81	T.	15	7	3	21	sw.	W. H. Delano.
Jackson	Cape Girardeau	458	23	37.8	+ 3.5	60	19†	13	12	35	11.46	+ 7.83	2.41	4.0	12	8	4	19	s.	L. M. Bean.

TABLE 1.—*Climatological data for January, 1913. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Missouri—Continued.																				
Joplin	Jasper	979	36	37.0	+ 0.7	69	18†	2	8	47	3.20	+ 1.04	1.50	1.0	5	15[a]	3[a]	12[a]	n.	Joplin High School.
Koshkonong	Oregon	911	13	38.6	+ 1.9	67	19	11	12	36	8.34	+ 5.43	2.45	T.	12	10[b]	5[b]	14[b]	sw.	J. W. Hitt.
Lamar	Barton	964	33	33.2	+ 0.5	69	19	2	8†	41	1.94	+ 0.24	0.79	1.0	5	14	4	13	sw.	E. H. Adams.
Marble Hill	Bollinger	420	22	40.4[i]	+ 6.3	74	18	15	12†	40	11.70	+ 8.46	2.00	0	10	11	13	7	s.	A. F. Hendrix.
Mountaingrove	Wright	1,490	15	37.0	+ 3.3	63	4	5	12	40	5.22	+ 2.77	1.35	0.5	10	12	5	14	nw.	Mo. Fruit Exp. Sta.
Mount Vernon	Lawrence	1,480	35	33.5[e]	− 1.3	69	19	4	8	40	3.70	+ 1.50	2.30	1.0	6	14[f]	1[f]	10[f]	nw.	J. R. White & Son.
Neosho	Newton	1,023	31	37.6	+ 2.5	70	19	1	8	42	4.18	+ 1.82	2.20	1.2	8	15[a]	2[a]	13[a]	nw.	W. O. Buck.
New Madrid	New Madrid	285	20	.....	.....	.....	.....	.....	.....	.....	15.65	+10.95	5.30	0	14	7	2	22	se.	Miss Josie Smith.
Oakfield	Franklin	793	22	34.6	+ 2.4	68	19	5	12	38	4.59	+ 2.20	1.36	1.0	9	6	7	18	s.	E. E. Steines.
Olden	Howell	1,246	24	37.4	+ 2.0	66	19	8	12	40	7.75	+ 4.81	2.20	0	7	11	4	16	nw.	J. D. Evans.
Rolla	Phelps	1,139	32	34.8	+ 4.0	67	19	5	12	42	4.37	+ 2.06	1.82	2.0	10	14	3	14	nw.	Prof. P. J. Wilkins.
Springfield	Greene	1,350	26	34.2	+ 2.9	68	19	5	12	42	3.40	+ 0.74	1.89	0.8	9	11	8	12	s.	U. S. Weather Bureau.
Kentucky.																				
Blandville	Ballard	445	32	40.6	+7.2	67	5	16	12	35	12.47	+ 8.06	2.61	T.	11	9	4	18	se.	E. W. Horr.
Tennessee.																				
Arlington	Shelby	.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Thomas B. Etheridge.
Bolivar	Hardeman	450	30	43.9	+5.5	69	5†	22	3	40	11.36	+ 6.62	2.25	0	14	7	2	22	n.	Miss Mary A. Smith.
Brownsville	Haywood	361	31	43.8	.....	70	7	22	9	41	10.99	.....	3.23	0	18	9	2	20	s.	Miss Hattie N. Moses.
Covington	Tipton	311	30	44.2	+4.7	67	5	21	9†	33	8.35	+ 3.85	2.10	0	12	12	1	18	s.	James S. Ruffin.
Dyersburg	Dyer	310	30	44.8	+7.0	70	8†	22	3	40	11.50	+ 6.92	3.00	0	12	15	1	15	se.	Miss Martha A. Sinclair.
Jackson	Madison	450	23	47.8[k]	+7.3	72	17	23	14	46[k]	10.49	+ 6.37	.....	0	.....	.....	.....	.....	.....	Shelby A. Roberts.
Kenton	Obion	325	11	42.8	+3.5	68	5	21	8†	37	13.36	+ 9.50	4.28	T.	12	11	4	16	n.	George S. Martin.
Memphis	Shelby	409	42	46.0	+5.7	70	5	21	8	35	7.71	+ 2.50	2.20	0	13	9	5	17	s.	U. S. Weather Bureau.
Milan	Gibson	440	31	41.8	.....	67	5†	21	9	39	11.31	+ 6.28	3.30	0	15	5	4	22	s.	Orlando F. Cantwell.
Trenton	do	345	33	43.9	+5.9	68	20†	22	8†	37	11.00	+ 5.73	3.83	0	11	12	3	16	se.	F. L. Dennison.
Union City	Obion	360	18	42.6	+3.0	68	5	21	8	33	16.16	+11.31	4.57	T.	10	11	7	13	s.	J. B. Kimzey.
Arkansas.																				
Alicia	Lawrence	.....	9	42.5	.....	65	6†	18	8	34	7.80	.....	2.05	0	7	7	11	13	sw.	McCullough & Guelck.
Amity	Clark	250	21	45.0	+2.9	69	16	13	8	39	7.70	+ 3.02	2.65	0	7	13	10	8	e.	J. W. Campbell.
Arkadelphia (near)	do	250	6	46.6	.....	69	4†	15	8	40	7.02	.....	1.95	0	9	16	4	11	sw.	J. A. Ross.
Arkansas City	Desha	145	30	.....	.....	.....	.....	.....	.....	.....	10.16	+ 5.51	2.70	0	10	.....	.....	.....	.....	W. C. Blundell.
Batesville	Independence	271	8	.....	.....	.....	.....	.....	.....	.....	9.60	.....	1.86	0	13	.....	.....	.....	.....	Lelia I. Teter.
Bee Branch	Van Buren	.....	21	42.0	+0.9	67	19	13	8	35	12.10	+ 7.88	5.70	0	8	.....	.....	.....	.....	J. E. Scanlon.
Benton	Saline	283	6	44.0	.....	69	19	15	8	46[d]	11.29	.....	2.85	0	8	.....	.....	.....	.....	P. B. Jackson.
Bentonville	Benton	1,303	8	37.4	+3.3	67	19	4	8	43	3.42	+ 0.79	1.19	1.3	9	16	5	10	s.	U. S. Weather Bureau.
Bergman	Boone	1,324	16	38.7	+6.0	68	19	7	8	38	4.77	+ 2.21	2.27	0.5	6	15	5	11	nw.	John T. Maxey.
Black Rock	Lawrence	259	9	.....	.....	.....	.....	.....	.....	.....	10.71	.....	4.75	0	11	.....	.....	.....	.....	S. J. Howe.
Brinkley	Monroe	226	27	46.8	+5.5	71	5	19	8	33	12.42	+ 7.49	4.31	0	12	.....	.....	.....	.....	H. L. D. Whitson.
Calico Rock	Izard	361	9	.....	.....	.....	.....	.....	.....	.....	6.88	.....	2.50	0	9	.....	.....	.....	.....	W. H. Stoner.
Camden	Ouachita	158	28	48.4	+5.4	74	5†	15	8	46	5.55	+ 0.07	1.44	0	12	.....	.....	.....	.....	R. K. Quarterman.
Centerpoint	Howard	470	13	46.4	+0.8	70	4†	13	8	38	9.67	+ 6.64	3.10	0	7	12	5	14	sw.	J. M. Huddleston.
Clarendon	Monroe	171	9	.....	.....	.....	.....	.....	.....	.....	8.48	.....	1.83	0	15	.....	.....	.....	.....	Mrs. B. E. Bishop.
Conway	Faulkner	309	30	43.5	+4.3	69	19	14	8	36	14.92	+10.88	5.44	0	10	.....	.....	.....	.....	G. H. Burr.
Corning	Clay	293	21	.....	.....	.....	.....	.....	.....	.....	11.00	+ 7.12	3.85	T.	11	.....	.....	.....	.....	Jacob Brobst.
Dardanelle	Yell	330	27	41.5	.....	70	19	13	8†	44	7.14	+ 4.25	3.00	0	8	.....	.....	.....	.....	A. Bernard.
Dodd City	Marion	1,175	32	38.5	+3.4	70	27	8	7	47[a]	7.50	+ 4.63	3.20	1.0	7	.....	.....	.....	.....	Neal Dodd.
Dumas	Desha	.....	1	.....	.....	.....	.....	.....	.....	.....	9.00	.....	2.50	0	10	13	14	4	.....	Lawrence Waterman.
Dutton	Madison	.....	11	37.6	.....	66	19	4	8	37	6.21	.....	1.93	T.	8	14	5	12	n.	J. M. Ricketts.
Eldorado	Union	265	9	48.3	.....	75	5	18	8	41	6.19	.....	1.80	0	14	.....	.....	.....	.....	Jeff J. Babb.
England	Lonoke	.....	7	46.9	.....	70	4†	16	8	37	9.01	.....	2.10	T.	13	.....	.....	.....	.....	J. C. Chenault.
Eureka Springs	Carroll	1,465	11	40.6	+2.9	74	19	4	8	49	5.02	+ 2.21	1.09	0	9	11	6	14	sw.	George W. Nicholds.
Fayetteville	Washington	1,451	24	40.2	+4.8	67	19	3	8	41	5.22	+ 2.50	1.15	2.0	10	15	7	9	sw.	University of Arkansas.
Fordyce	Dallas	.....	1	47.6	.....	72	5	16	8	36	4.77	.....	1.00	0	9	11	10	10	s.	J. B. Atkinson.
Fort Smith	Sebastian	481	31	41.0	+2.7	69	19	10	8	36	5.29	+ 2.78	2.28	0.1	9	13	4	14	e.	U. S. Weather Bureau.
Frazier's Turnpike	Pulaski	.....	1	.....	.....	.....	.....	.....	.....	.....	8.98	.....	2.00	0	7	8	3	20	sw.	R. E. Brown.
Fulton	Hempstead	264	9	.....	.....	.....	.....	.....	.....	.....	6.89	.....	1.62	0	10	.....	.....	.....	.....	B. C. Logan.
Georgetown	White	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.10	.....	1.85	0	11	.....	.....	.....	.....	Wm. N. Harris.
Hardy	Sharp	643	15	40.0	+1.3	67	19	13	8	36	10.84	+ 6.88	2.68	0.1	10	7	6	18	sw.	C. A. Caywood.
Helena	Phillips	182	28	45.2	+3.9	72	1	24	8†	40	7.53	+ 2.00	1.65	0	16	.....	.....	.....	.....	J. B. McLeod.
Hot Springs	Garland	600	21	46.8	+4.0	69	19	13	9	33	10.85	+ 6.04	3.40	0	8	20	5	6	se.	Army and Navy Gen. Hos.
Huttig	Union	85	6	52.0	.....	75	6	21	8	43[a]	8.13	.....	2.04	0	14	.....	.....	.....	.....	C. A. Berry.
Jonesboro	Craighead	345	18	42.8	+2.4	67	5	20	7†	35	7.64	+ 1.48	1.40	0	11	7	12	12	se.	Benedictine Sisters.
Junction	Union	.....	20	50.5	+6.5	75	5	19	8	32	4.63	+ 1.50	1.60	0	6	11	6	14	n.	J. A. Lowderback.
Lake Farm	Jefferson	195	6	48.2	.....	70	5†	19	9	38	6.83	.....	1.20	0	13	.....	.....	.....	.....	G. L. Spellman.
Lewisville	Fayette	262	9	48.6	.....	75	19	15	8†	40[a]	4.94	.....	2.01	0	10	.....	.....	.....	.....	F. W. Youmans.
Little Rock	Pulaski	357	34	45.1	+4.5	69	19	15	8	30	11.29	+ 6.50	3.32	T.	10	13	5	13	s.	U. S. Weather Bureau.
Lutherville	Johnson	775	16	40.7	+1.2	70	19	10	8	34	9.28	+ 6.10	3.09	T.	8	12	5	14	e.	W. R. Hentschel.
Malvern	Hot Springs	277	26	46.4	+ 5.3	69	5†	16	8	38	11.77	+ 6.06	3.40	0	11	.....	.....	.....	.....	Miss L. C. Smith.
Mammoth Spring	Fulton	512	9	39.2	.....	69	19	10	8	39[c]	9.29	.....	2.55	1.0	10	.....	.....	.....	.....	F. Wallick.
Marked Tree	Poinsett	229	9	.....	.....	.....	.....	.....	.....	.....	14.16	.....	2.67	0	13	.....	.....	.....	.....	Chapman & Dewey Lum. Co.
Mena	Polk	1,100	27	43.2	+ 3.4	70	1	8	8	35	9.17	+ 5.36	3.08	0	8	14	3	14	sw.	R. R. St. John.
Newport	Jackson	231	29	42.5	+ 4.3	70	23	17	9	38	17.30	+12.41	4.75	0	14	.....	.....	.....	.....	Chas. Sprigg.
Pine Bluff	Jefferson	215	25	45.8	+ 3.3	78	5	14	8	41	5.22	− 0.44	1.10	0	13	.....	.....	.....	.....	J. H. Hudson.
Pocahontas	Randolph	.....	21	43.2	+ 7.7	64	19†	12	8	32[a]	10.78	+ 6.54	4.00	0	10	11	3	17	.....	Benedictine Sisters.
Pond	Benton	1,250	16	38.4	+ 1.5	68	17†	− 1	8	41	3.41	+ 0.99	1.24	1.8	8	10	4	17	sw.	A. F. Stevens.
Portland	Ashley	122	4	49.0	.....	74	6	21	9	41	8.67	.....	1.88	0	13	.....	.....	.....	.....	T. A. Corson.
Prescott	Nevada	327	25	45.7	+ 3.4	75	7	15	8†	41	7.25	+ 2.39	1.45	0	12	.....	.....	.....	.....	Mrs. G. Cummings.
Rogers	Benton	1,385	22	39.5	+ 4.7	69	19	4	8	40	4.17	+ 1.62	1.68	0.7	11	17	2	12	n.	Carl A. Stark.
Springbank	Miller	182	6	.....	.....	.....	.....	.....	.....	.....	5.83	.....	1.41	0	12	.....	.....	.....	.....	G. Field.
Stuttgart	Arkansas	495	26	45.7	+ 3.9	70	5	18	8†	35	8.12	+ 2.68	2.28	0	13	10	10	11	s.	H. A. Buerkle.
Subiaco	Logan	1,050	16	41.8	+ 0.6	65	1†	16	8	38[b]	8.85	+ 5.37	2.16	0	10	17	7	7	nw.	New Subiaco Abbey.
Swain	Newton	2,300	2	39.6[j]	.....	62	19	5	8	40[j]	6.07	.....	1.68	T.	8	.....	.....	.....	.....	George Paxton.
Texarkana	Miller	332	29	47.0	+ 1.0	76	19	13	8	38	5.92	+ 2.85	1.68	0	10	.....	.....	.....	.....	D. E. Moore.
Warren	Bradley	304	18	50.2	+ 6.8	75	5	19	8	50	7.36	+ 2.35	1.40	0	12	.....	.....	.....	.....	W. J. Savage.
Whitecliffs	Little River	206	9	.....	.....	.....	.....	.....	.....	.....	7.58	.....	2.35	0	11	.....	.....	.....	.....	F. B. Lane.
Wiggs	Garland	.....	20	43.8	+ 2.1	68	19	11	8	41	9.99	+ 5.12	2.08	0	9	12	9	10	sw.	S. D. Jester.
Wynne	Cross	250	5	43.0	.....	70	5	19	8†	41	14.16	.....	4.00	0	15	.....	.....	.....	.....	John Seals.

TABLE 1.—*Climatological data for January, 1913. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Mississippi.																				
Anguilla	Sharkey	107	5	52.8	.....	75	11	25	8†	42	9.80	.....	2.00	0	14	11	0	20	sw.	E. W. Cook.
Austin	Tunica	200	17	47.7	+ 4.3	73	5	23	13	37	9.54	+ 3.57	2.54	0	15	12	4	15	s.	H. J. Irvine.
Batesville	Panola	230	26	48.7	+ 5.0	74	5	25	9†	40	12.16	+ 7.39	2.02	0	13	10	1	20	sw.	J. M. Cox.
Big Creek	Calhoun		2																	J. P. Havens.
Canton	Madison	228	23	54.7	+ 8.3	75	5†	28	8†	33	6.58	+ 1.24	1.85	0	14	7	10	14	se.	Dr. G. W. Smith-Vaniz.
Charleston	Tallahatchie		3	53.0	.....	78	6	22	13	45	10.83	.....	1.30	0	13	14	0	17	s.	W. B. Burke.
Clarksdale	Coahoma	177	6	47.3	.....	73	5	24	8†	39	8.43	.....	1.62	0	16	7	3	21	s.	A. C. Tuttle.
Cleveland	Bolivar	160	1								11.30	.....	2.45	0	17	10	0	21	.....	W. W. Boone.
Coffeeville	Yalobusha	241	4								8.60	.....	1.74	0	2	13	11	7	s.	C. K. Bailey.
Corinth	Alcorn	470	25	45.9	+ 5.6	70	7	24	13	38	13.07	+ 8.90	2.94	0	17	8	1	22	se.	M. A. Candler.
Crenshaw	Panola	187	4								7.08	.....	1.40	0	9	6	8	17	s.	Rodgers Woollard.
Duck Hill	Montgomery		14	51.4	+ 7.5	75	7†	25	9†	38				0	12	8	5	18	s.	W. H. Eskridge.
Edwards	Hinds	222	26	54.4	+ 6.7	76	7†	27	8	33	7.70	+ 2.36	1.35	0	16	8	8	15	s.	E. F. Farr.
Fayette	Jefferson	270	12	55.6	+ 7.3	76	6	28	8†	36	7.14	+ 1.52	3.08	0	8	5	14	12	s.	T. L. Darden.
Greenville	Washington	126	26	49.2	+ 4.0	74	5	24	8†	38	10.37	+ 5.71	2.26	0	13	10	1	20	s.	M. G. Harbison.
Greenwood	Leflore	140	13	49.9	+ 3.9	76	11	26	9	39	10.80	+ 5.93	2.86	0	15	8	3	20	s.	J. H. Stephen.
Grenada	Grenada	194	4																	E. A. Jones.
Hernando	De Soto	391	25	46.4	+ 4.6	70	11†	22	8†	40	5.51	+ 1.98	1.10	0	12	7	5	19	s.	W. F. Wood.
Hickory Flat	Benton	435	4								15.06	.....	4.75	0	14	6	14	11	s.	H. Powell.
Holly Springs	Marshall	600	26	44.9	+ 4.0	70	11	23	9	37	10.59	+ 5.94	2.06	T.	16	5	5	21	se.	L. B. Mosby.
Kosciusko	Attala	430	23	50.1	+ 4.8	74	7	24	14	37	8.97	+ 3.99	2.00	0	13	11	4	16	se.	E. L. Lucas.
Malone	Marshall		4								12.01	.....	2.50	0	15	.....	.....	.....	.....	M. J. Wilkins.
Marks	Quitman	163	4																	T. P. Banister.
Natchez	Adams	206	25	51.8	+ 2.0	75	6	27	8	30	5.67	+ 0.42	2.30	0	8	10	0	21	s.	F. L. Garrity.
New Albany	Union	398	4																	H. Marshall.
Pontotoc	Pontotoc	475	24	48.6	+ 5.3	74	7	21	8	35	9.41	+ 4.53	1.60	0	10	5	15	11	nw.	Dr. C. W. Bolton.
Port Gibson	Claiborne	116	25	53.0	+ 4.8	78	7	27	28	41	7.16	+ 1.90	2.25	0	10	6	3	22	e.	H. H. Crisler.
Rosedale	Bolivar	143	5	47.6	.....	80	5	23	13	45	9.80	.....	1.85	0	14	6	4	21	sw.	T. J. Murray.
Senatobia	Tate	284	4																	C. Brickell.
Shoccoe	Madison		10	54.6	+ 6.0	75	12	28	9	35	7.07	+ 2.76	1.48	0	10	12	5	14	s.	J. C. Pitchford.
Suffolk	Franklin		12	56.2	+ 6.1	76	7	29	8†	32	9.46	+ 5.38	2.99	0	13	8	8	15	nw.	Prof. Geo. H. Kent.
Swan Lake	Tallahatchie	148	8								10.96	.....	2.15	0	12	10	4	17	se.	Dr. S. D. Robinson.
Tchula	Holmes	130	8	53.1	.....	75	12	27	8†	38	9.50	.....	1.84	0	12	3	15	13	s.	Dr. M. P. Winkler.
University	Lafayette	502	20	48.0	+ 5.0	70	11†	23	9	33	16.15	+11.33	3.30	0	14	12	4	15	s.	Prof. J. H. Dorroh.
Utica	Hinds	287	9	55.0	.....	77	6	29	8†	35	7.59	.....	2.84	0	14	7	3	21	se.	Dr. J. B. Dudley.
Vicksburg	Warren	247	42	53.7	+ 6.7	75	5	27	8	42	7.00	+ 1.33	2.32	0	16	8	3	20	se.	U. S. Weather Bureau.
Water Valley	Yalobusha	300	24	49.1	+ 5.6	73	11	20	9	36	12.91	+ 7.58	3.50	0	13	10	6	15	se.	Miss Loula Erikson.
Woodville	Wilkinson	560	20	56.1	+ 6.0	77	6	27	8	33	11.79	+ 6.25	4.85	0	14	14	14	3	sw.	James E. Lee.
Yazoo City	Yazoo	116	19	51.5	+ 5.3	75	5†	24	8	35	8.15	+ 3.07	2.28	0	11	10	5	16	se.	W. H. Courts.
Louisiana.																				
Abbeville	Vermilion	18	25	58.7	+ 5.2	78	20	30	8	28	5.71	+ 1.40	2.35	0	11	6	10	15	se.	C. J. Edwards.
Alexandria	Rapides	77	25	53.6	+ 4.7	75	19†	23	9	36	4.99	+ 0.02	2.25	0	5	8	3	20	s.	Nellie Graham.
Amite	Tangipahoa	130	25	57.0	+ 5.8	80	5†	30	27	37	9.50	+ 4.15	2.20	0	8	7	17	7	n.	Lulu M. Wentz.
Antioch	Claiborne		1	50.8	.....	75	23	17	8	42	5.75	.....	1.45	0	14	13	0	18	s.	W. L. Anglin.
Avoca Island	St. Mary	9	2								4.83	.....	1.36	0	7	9	15	7	.....	J. N. Pharr & Sons.
Baton Rouge	East Baton Rouge	60	25	60.0	+ 8.3	78	6†	34	8	35	5.57	+ 0.62	1.33	0	11	6	1	24	se.	Elmo M. Bott.
Burnside	Ascension	20	13	60.3	+ 6.6	79	6	35	3†	37[c]	5.18	+ 0.81	2.30	0	6	12	7	12	.....	C. S. McFarland.
Burrwood	Plaquemines	1	25	61.2	+ 5.7	79	5	44	3	22[b]	2.77	− 0.98	0.96	0	4	8	3	20	se.	Graham Myers.
Cades	St. Martin		3	57.8	.....	77	20†	27	8	35[b]	5.37	.....	2.83	0	10	14	2	15	s.	C. E. Smedes.
Calhoun	Ouachita	180	25	52.4	+ 5.9	79	1	21	8	52	7.84	+ 3.39	2.80	0	12	11	8	12	s.	North Louisiana Expt. Sta.
Cameron	Cameron	6	20	52.8	− 3.3	74	20	19	8	36	2.76	− 0.95	1.52	0	10	10	14	7	ne.	Adolph Bruckert.
Carrollton	Orleans	7	2	61.6	.....	78	7†	34	28	30	.....	.....	.....	0	.....	9	1	21	.....	Loyola College.
Cheneyville	Rapides	67	25	54.4	+ 4.9	76	18	26	7	41	5.08	+ 0.46	2.40	0	5	7	2	22	e.	Walter I. Tanner.
Cinclare	West Baton Rouge		3	56.9	.....	79	6	30	8	40	7.70	.....	2.10	0	11	8	4	19	se.	Cinclare Central Factory.
Clinton	East Feliciana	113	25	57.2	+ 6.6	79	6	30	29	35	8.97	+ 3.95	1.93	0	13	6	0	25	s.	John A. White.
Collinston	Morehouse	65	12	52.8	+ 5.8	78	20†	24	8	42	6.45	+ 2.60	1.20	0	12	9	1	21	s.	John B. Reily.
Columbia	Caldwell																			H. W. Blanks.
Covington	St. Tammany	39	21	57.9	+ 7.7	79	20	32	28†	36	6.59	+ 2.32	1.60	0	11	8	0	23	n.	Cecille P. Champagne.
Dodson	Winn		4	53.6	.....	76	20	20	8	40	6.05	.....	1.01	0	11	9	6	16	s.	J. P. Lucas.
Donaldsonville	Ascension	33	25	60.3	+ 7.3	82	6	28	8	40	9.44	+ 5.26	3.50	0	9	7	2	22	n.	John F. Park.
Dutchtown	do		2								5.88	.....	2.90	0	7	3	22	6	.....	Picard & Geismar (Ltd.).
Farmerville	Union	177	25	49.8[f]	+ 3.2	75	6	20	8	40[f]	8.12	+ 3.77	2.45	0	11	9	2	20	s.	W. P. Chandler.
Ferriday	Concordia		6																	C. L. Achor.
Florence	Vermilion		1	57.6	.....	75	20	32	7	42	4.45	.....	3.20	0	4	9	11	11	s.	White Lake Land Co.
Franklin	St. Mary	10	21	59.3	+ 7.0	79	20	35	28†	37	5.13	+ 1.88	1.71	0	14	10	10	11	s.	J. M. Bonney.
Franklinton	Washington		3	57.6	.....	76	7	33	29	32	7.45	.....	2.30	0	8	.....	.....	.....	.....	Herbert R. Babington.
Grand Cane	De Soto	302	19	42.0	− 4.8	70	5†	7	8	53	4.66	+ 1.27	1.35	0	8	9	2	20	n.	G. Foster Provost.
Grand Coteau	St. Landry	93	25	56.4	+ 3.4	78	6	28	7	46	3.58	− 0.98	2.35	0	13	8	9	14	n.	St. Charles College.
Hammond	Tangipahoa	44	21	58.8	+ 7.6	79	7	31	28	35	7.15	+ 3.01	2.95	0	6	12	8	11	se.	C. C. Carr.
Houma	Terrebonne		25	60.9	+ 7.3	80	20	34	2	40	5.30	+ 1.85	1.80	0	10	11	9	11	s.	J. M. Foote.
Jena	La Salle		2	56.0	.....	80	18	24	8	41	6.83	.....	2.08	0	6	13	12	6	s.	C. E. Wilbanks.
Jennings	Calcasieu	30	16	56.6	+ 4.5	77	20	28	8†	33	5.06	+ 0.10	2.89	0	9	9	9	13	se.	J. F. Buch.
Laark	Morehouse		1	49.8	.....	82	17	22	31	36[a]	6.22	.....	1.60	0	12	14	0	17	.....	P. M. Donley.
Lafayette	Lafayette	36	25	56.9	+ 4.1	80	19	29	8†	41	6.96	+ 2.82	2.23	0	13	6	2	23	e.	J. J. Davidson.
Lake Charles	Calcasieu	22	25	54.8	+ 2.8	88	5	22	8	42	0.50	− 4.37	0.30	0	2	10	6	15	w.	George Boudreaux.
Lakeside	Cameron	9	2	55.2	+ 1.9	74	23	30	8	26	6.25	+ 3.53	4.10	0	3	14	8	9	.....	L. J. Nunemacher.
La Rose (near)	La Fourche		2	61.0	.....	82	23	33	3	31	3.47	.....	1.50	0	8	10	10	11	se.	Louisiana Delta Farms Co.
Lawrence	Plaquemines	6	22	59.6	+ 6.5	81	6	34	3†	38	3.59	+ 0.70	1.07	0	12	10	8	13	s.	H. C. Warmoth.
Leesville	Vernon		5																	C. M. McFarland.
Liberty Hill	Bienville		25	54.3	+ 5.7	76	20	18	8	44	7.00	+ 2.66	2.10	0	11	13	3	15	n.	E. A. Crawford.
Logansport	De Soto	192	9								4.41	.....	1.07	0	11	9	3	19	s.	Bettie M. Dennis.
Melville	St. Mary	45	25	56.6	+ 5.2	80	6	28	8	41	5.20	+ 0.28	2.05	0	9	10	1	20	se.	Charles B. McNeill.
Merryville	Calcasieu																			Harry J. Chatterton.
Minden	Webster	194	25	48.6	+ 1.3	75	23	15	8†	44	6.12	+ 2.60	1.20	T.	15	8	5	18	n.	Ethel Fort.
Monroe	Ouachita	82	25	53.2	+ 5.4	76	6†	23	8	41	5.80	+ 1.40	1.88	0	18	5	0	26	sw.	Kathryn Key.
Morgan City	St. Mary	14	7								4.43	.....	1.37	0	10	6	2	23	se.	V. E. Kinsey.
Napoleonville	Assumption		4	59.8	.....	79	7	32	13	41	7.75	.....	2.50	0	9	.....	.....	.....	.....	Leon Godchaux Co.
Newellton	Tensas		6	55.2	.....	77	6†	28	8	35	4.86	.....	1.48	0	9	.....	.....	.....	.....	John D. Fultz.
New Iberia	Iberia	15	25	60.0	+ 6.3	79	20	32	8	28	7.31	+ 3.17	3.05	0	12	9	10	12	sw.	Mrs. John A. Gebert.
New Orleans (1)	Orleans	51	42	59.9	+ 6.9	79	20	40	9	27	5.71	+ 1.08	1.61	0	11	5	9	17	se.	U. S. Weather Bureau.
New Orleans (2)	do	18	25	61.5	+ 8.3	81	7	37	28	33	5.88	+ 2.18	1 40	0	11	3	5	23	s.	Sugar Experiment Station.
Opelousas	St. Landry	83	21	53.8	+ 2.6	71	7†	27	8†	34	4.76	+ 0.45	2.23	0	6	6	0	25	s.	Andrew Moresi.

TABLE 1.—*Climatological data for January, 1913. District No. 7*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Louisiana—Continued.																				
Paradis	St. Charles	.....	2	.....	.....	...	.....	.....	.....	.....	3.36	.....	0.95	0	7	.....	.....	.....	.....	R. E. Boyce.
Pearl River	St. Tammany	29	7	.....	.....	.....	.....	.....	.....	.....	6.63	.....	2.20	0	14	11	1	19	e.	George F. Bancks.
Plain Dealing	Bossier	268	21	49.4	+ 3.4	78	23	15	8	43	5.31	+ 1.24	1.15	T.	11	9	5	17	se.	Leon Sanders.
Rayne	Arcadia	44	21	58.4	+ 5.5	80	20	30	8	28	7.31	+ 2.58	3.00	0	10	7	0	24	s.	A. P. McNeil.
Reserve	St. John Baptist	.....	12	55.4	+ 2.3	83	7	30	3	38	5.61	+ 1.32	2.38	0	7	7	16	8	.....	Leon Godchaux Co.
Richland Plantation	Rapides	.....	1	54.6	.....	75	21	26	8	33	5.25	.....	2.15	0	10	12	1	18	s.	A. B. Pendleton.
Robeline	Natchitoches	147	17	50.9	+ 3.9	78	18†	19	8†	44	5.25	+ 2.93	1.90	0	8	9	2	20	s.	Ruby McCook.
Ruston	Lincoln	312	18	52.4	+ 5.1	77	6	19	7	41	7.65	+ 3.70	2.70	0	10	22	0	9	s.	Andor M. Larson.
St. Francisville	West Feliciana	115	10	56.2	.....	75	7†	30	8†	45	7.89	.....	2.59	0	11	8	11	12	s.	G. W. Newman.
Schriever	Terrebonne	17	21	59.4	+ 6.4	80	6	34	28	37	5.10	+ 1.65	2.00	0	6	5	7	19	n.	William H. Gautreaux.
Shreveport	Caddo	249	42	50.5	+ 4.3	73	20	16	8	34	4.21	− 0.21	0.95	0	14	11	3	17	se.	U. S. Weather Bureau.
Simmesport	Avoyelles	42	7	.....	.....	.....	.....	.....	.....	.....	11.10	.....	3.74	0	13	4	0	27	s.	C. T. Leigh.
Southern Univ. Farm	Jefferson	.....	16	.....	.....	.....	.....	.....	.....	.....	5.70	+ 2.38	2.55	0	8	4	11	16	se.	F. L. St. Martin.
Sugartown	Calcasieu	.....	20	57.4	+ 6.3	76	5	29	8	36	7.99	+ 3.25	3.31	0	6	7	12	12	.....	G. W. Richardson.
Tallulah	Madison	91	6	52.4	.....	78	6†	27	8†	51	5.96	.....	1.96	0	11	.....	.....	.....	.....	Neal T. Halt.
Walker	Livingston	.....	3	57.8	.....	79	6†	31	2†	42	7.00	.....	1.30	0	9	6	20	5	nw.	H. C. Fondren.
Winnsboro	Franklin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. Carlton.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 7, Lower Mississippi Valley.*

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Colorado.																																	
Buena Vista	Arkansas	.07					.50				.14						.07															T.	0.78
Calhan	Big Sandy				.15	.10																											0.25
Canon City‖	Arkansas					.60	.05											T.			.08	T.											0.73
Colorado Springs	Fountain																																
Cripple Creek	Oil Creek	.02																			.08			.08	T.						T.	0.18
Cuchara Camps	Cucharas	.17			.52	.17					.05													T.						T.		0.91
Eads	Big Sandy	T.									T.																						T.
Fairview	St. Charles																																
Fremont Exp. Sta‖	Fountain	T.	T.	T.	.65	.05											T.	T.		.07				T.						T.	T.	.18	0.95
Garfield	Little Ark	.28			.36	.31					.03	.03	T.			.02	.09	.49		.03	.04											.08	1.76
Hamps	Big Sandy				.17	.12																		T.								0.29
Hermit Lake	Grape Creek	.22			.08	.92					.45	.19					.45	.35													.06		2.72
Hoehne (near)	Purgatoire	.20			.15	.06															T.									T.		0.41
Holly	Arkansas					.06																											0.06
Lake Moraine	Fountain	T.			.21	.20												.03			.04										T.	T.	0.48
Lamar	Arkansas	.20				.20																											0.40
Las Animas	do																																
La Veta Pass	Cucharas	.28				1.20				T.																							1.48
Leadville	Arkansas	.33	.01		.28	.01	T.				T.	T.	T.	T.			.10	.38		T.						T.	T.			.08	.09	1.28
Limon (near)	Big Sandy				.34																												0.34
Madrid	Purgatoire				.04	.08	.03														T.											T.	0.15
Marshall Pass	Arkansas	.78				.32	.21					.07					.18					.17										.18	1.91
Maxey	do	.01				.02																											0.03
Monument	Fountain					.54														.16											.10	.12	0.96
North Lake	Purgatoire	.10			T.	.64	.07										.06							.05									0.92
Pueblo	Arkansas	T.			.19	.03	T.					.01									.08											T.	0.31
Rocky Ford	do	T.			.17																												0.17
St. Elmo	Chalk Creek	.27			.21	.14					T.			.03		.07	.13	.35		.04													1.24
Salida‖	Arkansas	T.	.08			.45	.20									.07																	0.80
Santa Clara	Huerfano																																
Sheridan Lake	Arkansas																																
Stonewall	Purgatoire	T.				.04											T.				T.												0.04
Trinidad	do	.04	T.		T.	.40	.05														.02										T.		0.51
Two Buttes	Arkansas	.01			*	*	.32					.02																					0.35
Two Buttes Reservr	do	.04			*	.20						.04											T.										0.28
Victor	Oil Creek	T.			.10												T.	T.			.01			T.									0.11
Vilas	Cimmaron	.05					.05																										0.10
Wayne	Arkansas																																
Westcliffe	Grape Creek						.45														T.												0.45
Winfield	Clear Creek	.12	T.		.16	.04	.02				.04		.01	.01		.02	.03	.16		.02												.02	0.65
Woodman Sanatorium	Fountain																																
Wortman	Arkansas	.10	.10	.13						.21	T.	T.	T.	T.				T.	T.			.10		T.	.20			T.	.10	.10	.20	.10	1.34
New Mexico.																																	
Abbott	Canadian	.02			.02	.01															T.												0.05
Albert	do																																
Aurora	do					.15	.06										.06							.02									0.29
Bell Ranch	do					.07	.24																										0.31
Black Lake	do	T.				.15	.03										.01	.03						.02									0.24
Cabeza	do		T.			.04	.15																										0.19
Campana	do	T.				.12	.11																										0.23
Chacon	do					.42												.21															0.63
Cimarron (near)	do	T.				.24	.20										T.				T.												0.44
Clovis	Red					.01	.20																										0.21
Cuervo	Canadian					*	.56																										0.56
Dawson	do					*	.20														.03											.02	0.25
Elizabethtown	do	.01				.30	.12																										0.43
Folsom	Dry Cimar'n	.08			T.	.12	.07														.05											T.	0.32
Fort Union	Canadian					.15	.15														T.		T.										0.30
Hayden	do	.05				.06	.10																										0.21
Hoosier Ranch	do	.12				.06	.23														T.												0.41
Johnsons Park	do	T.			.05	T.															T.		T.										0.05
Johnsons Ranch	do					T.		T.													T.		T.										T.
Kappus	do	T.					*	.40																									0.40
Lake Alice	do	.09			T.	*	.19																						.01			.02	0.31
Logan	do					*	.15																										0.15
Lykins (near)	Red					*	.29																										0.29
Maxwell (near)	Canadian					*	.10																										0.10
Melrose	Red																																
Miami Ranch	Canadian					*	.32																										0.32
Mills (near)	do		T.			.05	.05														T.		T.										0.10
Montoya	do	.08					.24																										0.32
Mount Dora (near)	do																																
Nara Visa	do	.02					.45																										0.47
Palo Verde	do	T.	.11			.06	.03														T.			T.									0.20
Pasamonte	do						.07																										0.07
Pleasant View	do	T.				.04																											0.04
Portales	Red					T.	*	.25																									0.25
Raton	Canadian				*	.03															T.										.03		0.06
Rociada	do					*	.65											T.			T.		T.	T.									0.65
Rosebud	do		.08								.10																						0.18
Roy	do	*	.23				.32														T.												0.55
Roy (near)	do	*	.15				.25														.01		T.										0.41
Saint Vrain	Red					.30																											0.30
San Jon	Canadian		.05			*	*	.25																									0.30
Solano	do		.05		.04	.15															T.		T.										0.24
Springer	do					.14	.07																										0.21
Taylor	do	.03					.07	.07																									0.17
Texico (near)	Red				*	.10																											0.10
Trementina	Canadian					.10	.10																										0.20
Tucumcari	do					*	.28																										0.28
Valley	Dry Cimar'n																																
Vance (near)	Canadian	.06			T.	*	.20	T.																									0.26
Vermejo Park	do	.07				.30											T.															T.	0.37
Wagon Mound (n'r)	do					.10	.06														T.		T.										0.16

TABLE 2.—*Daily precipitation for January, 1913. District No. 7*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas.																																	
Amarillo	Canadian	T.				.02	.03	.06				T.																					0.11
Archer City	Red						T.	.13			.21	.10											.25										0.69
Arthur City ‖	do						T.				.20	.60	T.				T.	.40			T.		T.	.30	T.								1.50
Bonham	do							T.			1.86	.40					.05	.20			1.10		1.24										4.85
Canadian	Canadian							.15																									0.15
Childress	Red						.03																										0.03
Chillicothe	do						.20				.11													.22									0.53
Clarendon ‖	do																																0.00
Clarksville	do							*				4.15									1.25		.55				.50						6.45
Claude	do						.06																										0.06
Dalhart ‖	Canadian		T.					.06																									0.06
Denison ‖	Red							.20			.20	.80	.20			.20	.30	.40			.20	.10	.10	.80									3.50
Finley ‖	do							T.	T.		.30	1.70	T.					T.	1.00			.40		.75			T.	.15					4.30
Henrietta ‖	do							.10	.05		.20	.52						T.				T.										T.	0.87
Memphis	do						.10																										0.10
Miami	Canadian					T.	T.	.30				.02					T.																0.32
Ochiltree	do												.20																				0.20
Panhandle	do																																
Paris ‖	Red						T.	.33	T.		.33	2.88	.35			T.		.38			.20	.20	.06	1.29				T.					6.02
Plemons	Canadian					T.	.39	.32																									0.71
Quanah ‖	Red																							.30									0.30
Ringo Crossing ‖	do							.10			.30	2.60	.25					.62				.49		.95				.15					5.46
Romero	Canadian	T.					.45																										0.45
Sherman ‖	Red							T.			.25	1.07				T.	.15	.33			.12		.20	1.23	T.								3.35
Stratford	Canadian				.10	.30						T.																					0.40
Tulia	Red						.20	.10				T.				.10							T.										0.40
Wellington	do						.10																										0.10
Wichita Falls	do																																
Winfield	do						.65			T.		2.20						.27	T.		.67		.68				.22						4.69
Kansas.																																	
Alden	Arkansas					T.	.14	.14				T.					T.															T.	0.28
Anthony	do					T.	T.	.15									.05						T.									T.	0.20
Ashland	Cimarron					T.	.10	.15								.01	.01																0.27
Burlington	Neosho							.24									.21				T.	.06											0.51
Chanute	do					T.	T.	.15			.23	.14					.42				.13		.11	T.								T.	1.18
Cimarron	Cimarron					.10	.30	T.																									0.40
Coffeyville	Verdigris					T.	T.	.25				.38					T.	.17			.10		.21	.05									1.16
Coldwater	Cimarron					T.	.05	.05				T.				T.																	0.10
Columbus	Neosho					T.	.02	.21			.25	.08				T.	.16				.97		.39									T.	2.08
Coolidge	Arkansas						.20																										0.20
Cottonwood Falls	Neosho					T.	.05	.10			T.	T.					T.															T.	0.15
Council Grove	do					T.	.01	.03																.05								T.	0.09
Cunningham	Arkansas					T.	T.	.30																								T.	0.30
Dodge City	do					.02	.21	.05				T.																				T.	0.28
Eldorado	do					T.	.05	.13									.09					T.	.02									T.	0.29
Ellinwood	do				T.	T.	.07	.19				T.											T.									T.	0.26
Emporia	Neosho					T.	.12	.25			T.	T.					T.				T.		T.									T.	0.37
Eureka	Verdigris					T.	.01	.02			T.						.50			T.			T.										0.53
Fall River	do						.02	.08			.10	T.					.35						.10	T.								T.	0.65
Fargo	Cimarron					T.	.10	.30																									0.40
Fredonia	Verdigris					T.	.03	.08			.18	.10					.26				T.		.08	.01								T.	0.74
Garden City	Arkansas				T.	T.	.15	T.																									0.15
Great Bend	do					T.	.05	.04				T.																				T.	0.09
Greensburg	do					T.	.10	.10				T.																					0.20
Grenola	Verdigris						T.	.15			.17	T.					.31				T.		.10										0.73
Hess	Cimarron																																
Howard	Verdigris						T.	.10			.22	T.					.35				T.		.06									T.	0.73
Hugoton	Cimarron																																
Hutchinson	Arkansas						T.	.75																									0.75
Independence	Verdigris					T.	.02	.12			.31	.15					.25				.18	T.	.20	.02								T.	1.25
Iola	Neosho					T.	T.	.10		T.	.12	.03					.32				.20		.06	.02								T.	0.85
Irene	Arkansas	T.				.05	.10																	T.									0.15
Jetmore	do					.01	.12	.03																								T.	0.16
Kingman	do			T.	T.		T.	.54																									0.54
La Crosse	do					T.	.08					T.																				T.	0.08
Lakin	do					T.	.17																										0.17
Larned	do				T.	T.	.20	.10				T.																				.02	0.32
Lebo	Neosho					T.	.10	.25			T.	T.					.06				.05		T.	T.								T.	0.46
Le Roy	do						T.	.13	.03			.09						.21				.16		.04				T.					0.66
Liberal	Cimarron					T.	.20	.10				T.																					0.30
Macksville	Arkansas					T.	.20	.50				T.																				T.	0.70
McPherson	do					.10		.80				T.												.02								T.	0.92
Madison	Verdigris					T.	.20	.20																									0.40
Marion	Neosho					T.	.03	.30			T.	T.									T.		T.	T.								T.	0.33
Medicine Lodge	Arkansas							.14									T.																0.14
Medora	do																																
Minneola	Cimarron				*	*	*	.40				T.																					0.40
Mount Hope	Arkansas							.20																									0.20
Neosho Rapids	Neosho							.10	.06						T.																	T.	0.16
Ness City	Arkansas					T.	.15	.10																									0.25
Newton	do					T.	.02	.27				T.																				T.	0.29
Norwich	do					T.	T.	.30				T.					T.						T.									.08	0.38
Oswego	Neosho					T.		.30			.27						.30				.25		.45										1.57
Plains	Cimarron					T.	.20	.10																									0.30
Pratt	Arkansas					T.	.10	.30																								T.	0.40
Richfield	Cimarron	.05				.05	.20	.20																									0.50
Rome	Arkansas						.01	.02			T.	T.					.21						.05									.05	0.34
Sedan	Verdigris						T.	.07			.24	.17					.33				.10		.18	T.									1.09
Toronto	do						.15				.10						.32																0.57
Ulysses	Cimarron	T.				.05	.10	.20																									0.35
Walnut	Neosho						.14	.20			.18						.39					.22	.24										1.37
Wellington	Arkansas					T.	.01	.26				T.					.12						.01									T.	0.40
Wichita	do					.01	.17	.21			T.	T.					T.						.01	.01								T.	0.41
Winfield	do					T.	.20										.40				T.		.04									T.	0.64
Yates Center	Verdigris					T.	.05	.15	T.		.20	T.		T.			.25				T.		.02	.01								T.	0.68

TABLE 2.—*Daily precipitation for January, 1913. District No. 7*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oklahoma.																																	
Ada	Canadian					T.	.01	.09			.77	.16				T.	.04				.12		.66	.02									1.87
Alva	Arkansas					T.		.05		.10							.05															0.20
Apache	Red							.05			.25	.12											.18	T.								0.60
Arapaho	Washita							T.				T.																				T.
Ardmore	Red							.10				.94						.08			.02			.80								1.94
Bartlesville	Arkansas						.20				.10	.25					.07				.30		.30									1.22
Beaver	Canadian					.05	.15	.20																								0.40
Blackburn	Arkansas																															
Cache	Red																															
Calvin	Canadian						T.	.10				.80				T.	.04	.18			.38		.01	.84								2.35
Chandler	do											.10											.82									0.92
Chattanooga	Red							T.			.31	.10											.25									0.66
Chickasha	Washita																															
Cloud Chief	do							.09			.05	T.					T.						T.									0.14
Crawford	Canadian																															
Durant	Red						T.	T.			.10	1.29	.05			T.	.11	.54		T.	.48		.19	1.54								4.20
Eldorado	do							T.			.10	.11					T.						.05									0.26
Elk City	do																															
El Reno	Canadian							.06			.22	.13											.05									0.46
Enid	Cimarron							.05	.10			.10					.15						.02									0.42
Erick	Red							T.		.06	T.						.06															0.12
Eufaula	Canadian										.59	.26				.01	.52				1.06		.65	.31								3.40
Fairland	Arkansas					T.	T.	.20			.49	.15				.05	.08	.03			1.05		.70	.09								2.84
Port Gibson	do					T.		.20	.03		T.	.63	.09			T.	.04	.14			.60		.09	.78								2.60
Frederick	Red							.05			.30	.06											.15									0.56
Geary	Canadian							.05			.09						.11						.08	T.								0.33
Goodwell	do					.05	.40																									0.45
Guthrie	Cimarron							T.			.40	.15					T.						.35									0.90
Guymon	Canadian					.20		1.10																								1.30
Hartshorne	do								.02		2.00	.30										1.00	1.40									4.72
Healdton	Red		T.				T.	T.			.97				T.		T.	.20			T.	T.	.37									1.54
Helena	Cimarron							.05								T.								T.								0.05
Hennessey	do						.10			T.	.38												.07									0.55
Hobart	Red							.06			.11	T.					12						.03									0.32
Holdenville	Canadian						T.	T.	T.	T.	.67	.17						.15			.24		.83									2.06
Hooker	do					T.	.20	.10				T.	T.																			0.30
Hugo	Red						.04			.77	2.74					T.	.65		T.		.33		1.30									5.83
Hurley	Cimarron	T.				.20	.40																									0.60
Idabel	Red																															
Jefferson	Arkansas							.16									34						T.									0.50
Kenton	Cimarron	.10			.05	.20	.15					T.											T.									0.50
Kingfisher	do						T.	.06			.05	.29					.08						.06	.01								0.55
Lawton	Red							.02			.57	.15											.33	T.								1.07
Lawtonka Lake	do										.40												.20									0.60
McAlester	Canadian						T.	.11			1.01	.27				T.	.09	.26			.85		1.07	.09								3.75
Mangum	Red							.03																								0.03
Marlow	Washita					T.	T.				.25	.40											1.10									1.75
May	Canadian							.20																								0.20
Meeker	do						.60				.80												.50									1.90
Muskogee (1)	Arkansas							.08	.12			.82	.10			.01	.08	.12			.32		.02	.58								2.25
Muskogee (2)	do							.05			1.22	T.				T.	T.	.30			.30		.58	.05								2.50
Mutual	Canadian																															0.00
Neola	Washita							.02			.11						T.						.33									0.46
Newkirk	Arkansas						.05	.20				T.					.09						.09								T.	0.43
Norman	Canadian						T.	.10			.40	.32			T.		T.						.29									1.11
North Muskogee	Arkansas								.10			.11					.04	.23			1.35		.06	.57								2.46
Oakwood	Canadian																															
Okeene	Cimarron					T.		.10			T.	T.					.17						.01									0.28
Okemah	Canadian										.35	.30											1.00									1.65
Oklahoma	do						.02	.07			.20	.15					T.						.12	T.								0.56
Okmulgee	do						T.	.25			.90						T.				T.		1.25									2.40
Pauls Valley	Washita										.55	.22			T.	T.	.18						.85									1.80
Pawhuska	Arkansas					T.	T.	.12			.42						.73				.19		.23									1.69
Perry	do	.02						.08		.02		.10					.30						.10									0.62
Rankin	Red							.05			.04						.10															0.19
Ravia	Washita									.85		.05				.04					.48		1.10	.49								3.01
Sac and Fox Agency	Canadian						T.	.10			.43	.02											.65									1.20
Shawnee	do							.05				.59	T.					T.			T.		.25	.43								1.32
Snyder	Red																															
Stillwater	Cimarron							.10			.14	.13					.04						.15									0.56
Tulsa	Arkansas						.05	.10			.43	.19			T.		.02				.18		.63									1.60
Vinita	do																															
Wagoner	do						T.	.20			1.10	.40									1.55		1.50									4.75
Waukomis	Cimarron						T.	T.			T.	.26					.20						.03									0.49
Waurika	Red						T.	.05			.33	.08			T.		.03	T.					.53	T.								1.02
Weatherford	Canadian							.15			.28	.09			11								.11									0.74
Webbers Falls	Arkansas						T.			2.00							.25				.75		1.00									4.00
Whiteagle	do						T.	.02			.34						.20						.25									0.81
Woodward	Canadian						T.	.40																								0.40
Wyandotte	Arkansas												.70								1.20			.80								2.70
Missouri.																																
Belle	Meramec					T.						.50					.90				.70		.70									2.80
Birch Tree	Black		.12				.28	.64			1.52	1.22						.84			1.70		.18	.88							.10	7.48
Cape Girardeau	Mississippi			.10		.02	2.30	1.40	0.40		.02	3.20	.90			.02	.20	.20	.10	.05	.70	.20		2.00							.20	12.01
Cardwell	do		.47			.05	2.80	1.50			.90	5.80				T.		1.07			1.45		.08	.98					T.		.50	15.60
Caruthersville	do		.54			.03	4.12	2.33	T.		.72	3.50				T.		1.28		T.	.98		T.	.78					T.		T.	.84	15.12
Cassville	White					T.	.02	.17			.84	.43	.01			.02		.19					.42	.31							T.	2.41
Dean	Neosho						T.	.10	T.		.96				T.						1.56		.63	.20								3.45
Doniphan	Black		.20			T.	1.61				2.10	1.00				T.		.75			1.23		.03	1.13						.08	.05	8.18
Gano	Meramec					.06	.25	.50			.75	.33				.10	T.	.20			1.92		.35	.51							T.	4.97
Goodland	Black		.14									2.40					.50	.53			1.30		.10	.75								5.72
Hollister	White						.10	.10			1.00	.50				.16		.40			1.00		.50	.70								4.46
Ironton	Mississippi			.14			.47	.55	.30	T.	.10	1.81	.11			.42	.15	.85	.03		.50	.85		1.00					T.		.20	7.48
Jackson	do	.25				1.67	1.75				1.50	2.41				.07	.47	.28			1.47		1.35					.02		.22		11.46
Joplin	Neosho								.10			.60					.40				1.50		.60									3.20
Koshkonong	Black		.10			T.	.20	.40			2.45	1.73				.05	.06	.65	.14		1.11		.30	1.15								8.34
Lamar	Neosho						T.	.02	T.		T.	.51	T.					.21			.79			.41							T.	1.94
Marble Hill	Mississippi		1.00				1.00		1.00		2.00	1.50			1.50		.50				1.50			1.50							.20		11.70
Mountain Grove	White		T.			T.	.12	.48			.80	.67	T.				.11	.62	.15		1.35		.18	.74							T.	5.22
Mount Vernon	Neosho						T.	.18			.41	.05						.16			2.30		.60	T.							T.	3.70
Neosho	do							.10			.60	.10					.17			.25	2.20		.50	.26								4.18
New Madrid	Mississippi			.30			2.00	1.10	.50		.04	5.30	2.05					.60	.44		.10	1.30		1.15					.02		.75	15.65
Oakfield	Meramec					T.	.10	1.02			.86	T.					.29	.10			1.36		.31	.51				.04		T.		4.59

TABLE 2.—*Daily precipitation for January, 1913. District No. 7*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***Missouri*—Contd.**																																	
Olden	White		.50				T.	T.			2.00	2.20				.30		.60	.25		1.90											7.75
Rolla	Meramec						.10	.54			.72	.18	T.			.07	.10	.07			1.82		.42	.35					T.		T.	T.	4.37
Springfield	White					T.	.01	.18			.49	.09			T.	.02	.17			.50	1.39		.55	T.							T.	3.40
Kentucky.																																	
Blandville	Mississippi		.35			T.	2.35	1.53			1.35	2.61				T.	T.	.85			1.43		.04	1.12					T.		.07	.77	12.47
Tennessee.																																	
Arlington ‖	Mississippi																																
Bolivar ‖	do		.04	.64			.16	2.25	1.45		.15	T.	1.37					1.31	.17		T.	.58		.60	.98			.75				.91	11.36
Brownsville ‖	do			.46		T.	1.00	3.23	.84		.17	.19	1.52					.30	.70		.04	.65		.54	.21	.17	.02	.12		.03		.80	10.99
Covington ‖	do						.90	.40	.45		.10	.60	2.10					1.30	.12			1.50		1.45	.25							.18	8.35
Dyersburg ‖	do		T.	.30			1.50	1.65	T.			3.00	1.05					.55	.10		.25	1.20		.85	.20							.85	11.50
Jackson	do		.60			*	3.60	*	*		*	*	2.10					.85			.70			.72	.75							1.17	10.49
Kenton	do		.52	.02			1.62	2.00			.43	4.28	.70					.84		T.	1.10			.93	.22							.70	13.36
Memphis	do		.11			T.	1.83	1.16			.37	1.38					T.	1.07		T.	.64		.09	1.41	.04		.08	.14			.45	T.	7.71
Milan ‖	do			.40		.18	.25	3.30	1.05		.15	.16	2.00				T.	.38	.37		T.	.63		.85	.90	.05						.64	11.31
Trenton	do		.35				1.91	1.38	.05			3.83	.64					.75			.58			.76	.32							.43	11.00
Union City	do		.45				3.70	2.10	T.		.50	4.57	.67					1.08			1.37			.87								.85	16.16
Arkansas.																																	
Alicia	White						2.05				.20	2.05						1.10			.70		.80									.90	7.80
Amity	Ouachita						.17	.40			1.10	2.65						1.35			1.10		.93									7.70
Arkadelphia (near)	do						1.11	.42			.75	1.95						.60		.65			1.14			.09					.31	7.02
Arkansas City ‖	Mississippi			.06					.14	1.37			1.92					T.	2.70			.75		.37		.93		1.40				.52	10.16
Batesville ‖	White			T.		.06	1.80	.78	.70	T.	.35	1.60	1.78					.32	.09		.08	.88		1.00								.16	9.60
Bee Branch	Arkansas					T.	1.00	.50			1.80	5.70				T.	T.	1.20			.80		.10	1.00									12.10
Benton ‖	Ouachita						2.78		.94		.76	2.85	.55					2.02						1.13								.26	11.29
Bentonville	Arkansas		T.				.03	.10			.89	.08	T.		T.	.03	.34			.02	1.17		.76								T.	3.42
Bergman	White		.04								1.00	1.27						1.12			1.12			22								4.77
Black Rock ‖	do						1.70	.59			T.	.54	4.75	.98				T.	.70	.23	.10	.60			.13							.39	10.71
Brinkley ‖	do			.16		T.	4.31	1.07			.41	.82	2.08					.88	.35			.86		.71				.06			.71	12.42
Calico Rock ‖	do						.20	.25	T.		.28	2.50	.45			T.		.60			.20	1.00		1.40								6.88
Camden ‖	Ouachita						.96	.54	.07		.26	.61	.83						.33	.02		.45		.75				.39				.34	5.55
Centerpoint	Red					T.	.07	.25			3.00	3.10				T.		1.53			.78		.94	T.		T.						9.67
Clarendon ‖	White			.12		.12	1.83	.83	.17		.46	.40	1.33						.77	T.	.05	.65		.55	.02			.20				.98	8.48
Conway	Arkansas		T.			.02	3.03	.68			1.88	5.44							2.02			.61		.22	.80							.22	14.92
Corning	White	T.				1.75	1.24	T.			1.75	3.85	.05			T.	1.09	.02			.04	.97									.02	.22	11.00
Dardanelle ‖	Arkansas										.50	3.00	T.			.17		1.30	.13		.32	.57		1.15								7.14
Dodd City	White	.05				.05	1.30					3.20						1.10			1.10		.70									7.50
Dumas	Arkansas						2.50	.55		.40	1.35							.85			.70		.50	.25			1.20			.70		9.00
Dutton	White		T.				T.				1.26	.67				.10	.41	1.07			1.22		.57	91								6.21
Eldorado ‖	Ouachita						.10	1.80	.10		.66	.20	1.32						.45	.02	.02	.70		26	.04			.89				.23	6.19
England ‖	Arkansas		T.	.04		T.	2.10	.85	.20		.20	1.00	1.00					.90	.50	T.	T.	.85		.90				.05				.42	9.01
Eureka Springs	White		T.				.40	.16			1.09	.45			.12		T.	.67			1.09		.40	.64									5.02
Fayetteville	do						.11	.22			1.15	.68				.09	.12	.89			1.03		.40	.53									5.22
Fordyce	Ouachita						.23	.25			.63	1.00						.35			.65		.83								.43		4.77
Fort Smith	Arkansas		T.				.03	.16			2.34	.05			T.	.10	.83			.05	.45		1.29									5.29
Fraziers Turnpike	do						*	3.35			*	2.65						1.80			.80										.38		8.98
Fulton ‖	Red						.04	.86			.50	1.62	1.50					T.	.60			.35		.92				.20				.30	6.89
Georgetown	White			.02			1.70	1.80	.20		.15	1.85	1.05					T.	1.42			.02		1.00								.89	10.10
Hardy	do		.02				1.06	1.15	T.		2.80	2.68				.03		.65			1.14		.17	1.14							T.		10.84
Helena ‖	Mississippi			.01		.02	.02	1.54	1.65		.35	.19	1.19						.08	.05	.02	.55		.37	.17			.67				.65	7.53
Hot Springs	Ouachita						1.50	1.40			1.20	3.40					T.	1.45			.90		.10	.90									10.85
Huttig	do		.05				.01	2.04			.19	2.01	.01					1.19	.01		.34	.29		.22	.75		.30	.72					8.13
Jonesboro	White		.16				.42	.44	.35	.78	.64	.80						1.20			1.40			1.00							.45		7.64
Junction	Ouachita					T.		1.47				1.60						29			35						.43				.49		4.63
Lake Farm	Arkansas	.10	.42			.01	.90	.45			.45	1.20						.90			55			.75			.30	.20				.60	6.83
Lewisville	Red					.30	.65	.15			*	2.01						.10		.02			.61				40				.70		4.94
Little Rock	Arkansas		T.			1.11	1.62	.49	T.		1.82	1.94						1.69		T.	.74		.51	.42			T.				.95		11.29
Lutherville	do		T.				.28				2.61	3.09				T.	.08	1.14			.57		.54	.97									9.28
Malvern	Ouachita		T.	T.		.10	3.40	.63			.35	1.90	1.07				T.	.20	1.40		T.	1.05		1.10				T.				.57	11.77
Mammoth Spring	White		.05				.85	.10			2.13	2.55					.04	.86			1.55		.20	0.96									9.29
Marked Tree ‖	St. Francis			.72			2.67	1.37	.19		.32	2.10	2.00					1.27	.29			.95		1.08	.15							1.05	14.16
Mena	Ouachita						.36		.72		2.37	3.08					.09				1.05		.50	1.00									9.17
Newport ‖	White		.05	.10			2.10	1.60	.25		.45	4.75	1.97					3.25	.35		.10	1.05		.90								.38	17.30
Pine Bluff ‖	Arkansas			.15			1.00	.06	.02		.06	.06	1.10				.03		.65		T.	.60		.70				.25				.54	5.22
Pocahontas	White		.15				.50	.95			2.10	4.00						1.02		.80		.09	1.03									.14	10.78
Pond	Arkansas						T.	.05	.13			.99				.02	.10	.28			1.24			.60									3.41
Portland ‖	Ouachita		.05					.10	.80		.18	.10	1.60					.02	1.88	T.		.76		.43	1.04	T.		1.31				.40	8.67
Prescott ‖	do						.85	.45	.10		.45	1.45	1.00				.25	.60				.45		1.05				.15				.45	7.25
Rogers	Arkansas		T.			.01	.04	.02				.48	1.20	T.		.05	.01	.52			.92		.40	.52									4.17
Springbank ‖	Red						.38	.50	.08		.35	.63	1.41						.34		.05	.45		.65			T.	.47				.52	5.83
Stuttgart	Arkansas		.09				2.28	.79			.42	1.60						.76		.04	.72		.03	48			.26		.03			.62	8.12
Subiaco	do			.02			.51	.98			2.16	1.78					.09	1.13			.73		.82	.63									8.85
Swain	White		T.			T.					1.00	1.48				.05	.09	.66			1.65		.51	.63									6.07
Texarkana ‖	Red						.32	.52				1.68	1.43			T.		T.	.50		.05	.16		.70			T.	.28				.28	5.92
Warren ‖	Ouachita			.10				1.30	.35	.40	.50	.90						.57				.58	.28	.43				1.40				.55	7.36
Whitecliffs ‖	Red						T.	.75	.04		.49	2.35	.80			.05		.70	.55			.80		.95	T.			.10					7.58
Wiggs	Ouachita					.07	1.64	1.24			1.44		2.08				T.	1.40		1.10			.11	.91	T.								9.99
Wynne ‖	St. Francis			.31		.55	4.00	.95	.19		.30	1.01	2.60					.85	.63		.20	.60		1.25	.04							.68	14.16
Mississippi.																																	
Anguilla	Yazoo		.05				1.55	.30	.25		.12	.08	.70					.80	.40			.25		2.00	1.00		1.75					.55	9.80
Austin	do		.53					2.54			.75	1.21	.48					.91		.05	.52	.16		.61	.12		.06	.59	T.	.04		.97	9.54
Batesville ‖	do			.04			.26	2.02	1.56		.51		1.26						1.65			.78		.52	1.52	.10		1.09				.85	12.16
Big Creek	do																																
Canton	Big Black		.12				1.47	.08	.35		.10	.80					.15	.55			.03			.53	.44		1.10	.75				.11	6.58
Charleston	Yazoo		.10				1.00	1.25	.75		.15		1.20					1.30	.45			.80		.90	.87			1.25				.81	10.83
Clarksdale ‖	do		T.	.20			T.	.37	1.04		.23	.03	1.62					.02	1.28	.01	.01	.61		.24	1.15	.06		.96		T.		.60	8.43
Cleveland	do		.20	.04			.81	.65	.56	.25		.68	.59				.02	2.45	.06	T.		.76	T.	1.39	.82		.31	1.06			T.	.65	11.30
Coffeeville	do		1.40			.03	.14	.92	.31				.46					1.68	.54					.65	.42			1.74				.31	8.60
Corinth ‖	Mississippi			.42			.08	2.94	1.96		.18	.04	1.95						1.30	.02	.02	.50		.16	1.54	.30	.02	1.10	T.			.54	13.07
Crenshaw	Yazoo		.60			.50	.60					1.40						.70				1.18		.20			1.20				.70		7.08
Duck Hill	do		.25			T.	1.10	1.10	.47		T.	T.						1.51	.58		T.	.55		.71	1.40		T.	1.32				.52	
Edwards	Big Black		.15			.20	.45	.50	.35		T.	.20	.70					.20	.50		.10	.20		.90	.70		1.35	1.00				.20	7.70
Fayette	Mississippi		T.				.36	.44				T.						2.11						.40	.60		2.41	.67				.15	7.14
Greenville ‖	Yazoo		T.	.10				.39	1.00		.02	T.	2.16				T.	.10	2.26	.01		.81		.37	1.43	T.		1.29				.43	10.37
Greenwood ‖	do		.02	.34			.18	.82	.62		.06		.87					.02	2.86			.61		.43	1.32	.37		1.71				.57	10.80
Grenada	do																																
Hernando ‖	do			.15		.08	.12	.02	.88		.12	.37	.94					T.	1.10			.70		.15								.88	5.51

TABLE 2.—*Daily precipitation for January, 1913. District No. 7*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Mississippi—Con.																																	
Hickory Flat	Yazoo		.43				4.75	1.70	.75			.10	1.25						1.13	.20			.10	1.85	1.10		.20	1.00				.50	15.06
Holly Springs ‖	do		T.				.34	2.06	1.16		.12	.01	1.24	T.				.02	1.54	.01	.05	.81		.34	1.10	.25		.96				.58	10.59
Kosciusko ‖	Big Black			.38				1.28	.54				1.34						1.87	.11			.02		.48	.43	.02	2.00	.02			.48	8.97
Malone	Yazoo						1.70	2.50	.40		.05	1.05	.25					1.04	.21	.42	.17	.11		.66	1.55		T.	.85		T.	T.	1.05	12.01
Marks	do																															
Natchez ‖	Mississippi			T.			.07	T.	.62		T.	T.	.12					T.	2.30	.11		T.			.95			1.20				.30	5.67
New Albany	Yazoo																															
Pontotoc	do					T.	1.30	.80				.20						1.24		T.	.80			1.60	1.40		.87				.50	.70	9.41
Port Gibson ‖	Mississippi			.06			.02	.37	.63		T.	T.	.56						.91			.18		T.	2.05			2.25				.13	7.16
Rosedale ‖	Yazoo			.05			.05		.65	1.05	.67	.05	1.85						1.68			.87		.38	.63	.15		1.10				.62	9.80
Senatobia	do																															
Shoccoe	Big Black		.43				.66	T.	.79			T.	.69						1.48		T.	.07		.44	.46		.81	1.24			T.		7.07
Suffolk	Mississippi		.08				.49	.60				.52						1.53	.51	.02	.16			1.05	1.01		2.28	.71			.50		9.46
Swan Lake	Yazoo			.15			.10	1.17	1.10				1.60						2.15			.60		.30	1.85	.22		1.30				.42	10.96
Tchula	do		.20	T.		T.	1.50	.11				T.	1.43					.55	.59			.36		.60	.93		.37	1.84				1.02	9.50
University	do		.45			T.	3.30	2.50	.80	T.		.72	1.10				T.	.90	.29	.04		.69		1.25	1.85		T.	1.26				1.00	16.15
Utica	Mississippi		.05			T.	.46	.58	.25		.05	.27						.23	.46			.10		.87	1.28		2.25	.59				.15	7.59
Vicksburg	do		.05			T.	2.32	.21	.02	.02	T.	.32					T.	.42	.06	T.	.12	.02	T.	.67	.71		1.82	.13			.05	.06	7.00
Water Valley	Yazoo	.25				T.	3.50	1.10			.08	1.10					T.	1.55		.40	1.05		T.	.45	1.70		.70	.60			.43		12.91
Woodville	Mississippi		.14				.10	.32	.05		.05	.90	.05					.05	2.00			T.		.93	3.92		2.35	.53				.40	11.79
Yazoo City ‖	Yazoo			.52			T.	.60	.40				1.09						1.02			.29		.02	1.21	.24		2.28				.48	8.15
Louisiana.																																
Abbeville	Coast		.10			T.		.28		.02	.05	.91						.01		.30		T.	T.	T.	.30	1.10		2.35			.29		5.71
Alexandria ‖	Red							.50	.10		T.								T.	1.50			T.		T.	.64			2.25			T.	4.99
Amite ‖	Coast		.10				.70	.10					2.00					1.20					T.		2.20		2.00				1.20	9.50
Antioch	Red						.08	1.45			.50	1.08							.35		.04	.61	.11	.06	.13	.08		.47	.55			.24	5.75
Avoca Island	Coast							.10				1.10						.20		1.36					1.27		.60					.20	4.83
Baton Rouge ‖	do			.04			.05	T.	.03				1.32						.65	.04	.06				.30	1.05		1.33				.70	5.57
Burnside	do		T.					T.		T.		T.	.96						.24	.66					2.30		.93	.09					5.18
Burrwood	do		T.										T.							.96						.62	.74				.45	2.77
Cades	do		T.					.22			.10	.15	.35							.91		T.			.12	.30		2.83	.13			.26	5.37
Calhoun	Ouachita		.05					.65			.11	2.80						1.20	.07			.05		.97	.39		.38	.90				.27	7.87
Cameron	Coast		.02				.12			.14		.07	.05											.02	.64		1.52	.15			.03		2.76
Carrollton	do																															
Cheneyville ‖	Red					.05														1.50					.80			2.40				.33	5.08
Cinclare	Coast		.20					.10				1.40					.05	.90	.05	.20	T.			2.10	.30		1.40				1.00		7.70
Clinton ‖	do	.02		.16			.05	T.	.30	T.	.02	T.	1.48					T.	1.93	.03		.12		T.	1.90	.30	T.	1.88				.78	8.97
Collinston	Ouachita		T.					1.00	.15		.11	.70	.22					.60	.05	T.	T.	T.	T.	1.00	.62		.40	1.20				.40	6.45
Columbia	Red																															
Covington ‖	Coast						.50					.35	.60						1.40	.06	.04			.10	.40	1.43		1.60				.11	6.59
Dodson	Red		T.				.15	.61				.80						.80	.53		T.	.16		1.01	.57		.30	.82				.30	6.05
Donaldsville ‖	Coast			.15					.15				1.60					.28	1.20	1.26						3.50		1.20				.10	9.44
Dutchtown ‖	do											.20			.90		.10	.70							2.90		.80				.28	5.88
Farmerville ‖	Ouachita							1.85		.20	.16	2.45					.10	.42		T.	.62		.32	.70			1.00				.30		8.12
Ferriday	do																															
Florence ‖	Coast																	.15						.70	.40		3.20					4.45
Franklin ‖	do	.04					.04		.04		.06		1.13					.02		.04	1.71	.01	.04		.22	.46		1.20				.12	5.13
Franklinton	Pearl					T.	.40	.20	.25		T.	T.	1.25					T.	1.05		T.		T.	T.	1.90	T.	2.30	.10					7.45
Grand Cane ‖	Red						.45	.60			.22	.63	.76									.40		.25				1.35					4.66
Grand Coteau	Coast		.06		T.	.04	.01	.19		.02	.02	.07					T.	.68	.01						.06	.02		2.35			.05		3.58
Hammond	do							T.			T.	1.10							1.10		.25			.05	2.95		1.70						7.15
Houma ‖	do		.05			.05						1.00							1.80	.10			.10	.15	.30		1.60				.15		5.30
Jena	Red						.90					.50						1.16						1.77	.40			2.08					6.83
Jennings ‖	Coast								.16		.09		.12					.12	1.08	.05					.35			2.89				.20	5.06
Laark	Red						.60	.60	.30			.10	.20					1.60				.50	.90		.60		.10	.40				.32		6.22
Lafayette ‖	Coast			.06			.02				.05	.04	1.83						1.47	.08		.08		.02	.67	.37		2.23				.04	6.96
Lake Charles ‖	do							.20							.30																		0.50
Lakeside	do																								2.10		4.10					.05	6.25
La Rose (near)	do		13					13											1.50	.15	T.	.03		.03	.20		1.30				T.	T.	3.47
Lawrence ‖	do	.04		.03			.15		.03				.84							1.07		.04		.10		.02	.21	.98				.08	3.59
Leesville	Sabine																															
Liberty Hill	Red		.13					1.20			.25	2.10						.85					.10	.50	.51		.30	.91				.15	7.00
Logansport ‖	Sabine						.02	.67			.17	.67	.70						.32			.19		.38	.07			1.07				.15	4.41
Melville ‖	Red			.10		T.	T.		.08			T.	.42					T.	1.30	.05				T.	.20	.60		2.05				.40	5.20
Merryville	Sabine																															
Minden ‖	Red			.05			.34	.78	.04		.20	.40	.98						.50	.04	.02	.65		.40	.20		T.	1.20				.32	6.12
Monroe ‖	Ouachita		.01	.04				.07	.60		.06	.04	.64				.01	.05	.63	.03	.02	.11		.54	.82		.02	1.88				.23	5.80
Morgan City ‖	Coast	.05	T.	T.			T.		.02		.02	T.	1.37			T.		.04	T.	1.34					.53	.35		.44				.27	4.43
Napoleonville	do							.20				1.25					.20	2.50	1.30					.45	.55		.85				.45		7.75
Newellton	Mississippi		T.				.35	.05	.41				.18					.34		.25				1.48				1.11	.69				4.86
New Iberia	Coast		.08			T.	T.	T.		T.	.10	1.10	.40				T.	.05	.45		T.			.30	3.05	.05	1.25	.08				.40	7.31
New Orleans (1)	do		T.			.34	.01	.11	.08	T.		T.	.95						1.61	T.		T.	.02		.55	.03	1.08	T.			T.	.93	5.71
New Orleans (2)	do	.01					.25		.17				1.07						1.03	.33				.04	.45	.04	1.40					1.09	5.88
New Orleans (3)	do					.22		.09	.02			.06	.60						.96	.14			.01		.84		1.47					1.02	5.43
New Orleans (5)	do	.01	.02			.25		.11	.12				1.03						1.38	.02		.01	.02		.57		1.01					.83	5.38
New Orleans (6)	do					.35		.09	.09				1.02						1.65	.12					.58		1.16					.98	6.04
New Orleans (7)	do					.33		.12	.22				.74						1.00				.01		.73		1.15					1.06	5.35
New Orleans (8)	do					.26		.02	.20				.80						1.06	.02					.57		1.01					.73	4.67
Opelousas ‖	do								T.				.56						.72						.74	.27	2.23					.24	4.76
Paradis	do						.21				.71								.78	.18					.02	.51	.95						3.36
Pearl River	do	.06		.02	T.		.80	.02	.04		T.		.64						.32	.72				.18	.56	.70	.27	2.20				.10	6.63
Plain Dealing	Red						.99	.38			.25	1.15							.12			.46		.40	.32			.38	.29				.57	5.31
Rayne ‖	Coast			.05			T.		.10			T.	.30					.05	1.25	.10		T.			1.90	.30		3.00				.26	7.31
Reserve ‖	do								.04				.41						.74						.69	2.38		.92				.43	5.61
Richland Plantation	Red		T.			.03		.46	.12		T.	.05				T.		T.	1.42			.10	.10		.65	T.	T.	2.15				.17		5.25
Robeline ‖	do							.30	.70		.10		.75						.70			.20		.60				1.90					5.25
Rushton	Ouachita		.06					1.52		.20		2.70						.70			.10			.41	.80		.94				.22		7.65
St. Francisville ‖	Mississippi		.13				.08	.19	.37		.72		1.20						.84	T.	T.				1.27	.25	2.59					.25	7.89
Schriever ‖	Coast	T.	T.										.80							2.00	T.				.40	.40	T.	1.10				.40	5.10
Shreveport	Red		T.			.28	.22	.44		.27	.11	.66					T.	.16		.02	.43		.37	.02			.84	.11			.28		4.21
Simmesport	do			.03			.03	.28	.31		.05	.04	.03						T.	3.20		.01			3.74	.03		2.90				.42	11.10
South. Univ. Farm	Coast		T.				.20	.10		T.								.10	2.20	T.			.15		T.		2.55	.20			.20	5.70
Sugartown	do						.35	.25										3.31						.93		2.05	1.10					7.99
Tallulah ‖	Mississippi						.09	.72	.15		.09		.77						.73			.20		.15	.77			1.96				.33	5.96
Walker ‖	Coast		.07				.20	.80				.93						.93						.90	1.30		1.12				.75		7.00
Winnsboro	Red																															

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 7, Lower Mississippi Valley.*

Date.	Colorado.						New Mexico.				Texas.				Kansas.										Oklahoma.			
	Lamar.		Leadville.		Pueblo.		Albert.		Cimarron.		Amarillo.		Paris. §§		Dodge City.		Ellinwood.		Iola.		Liberal.		Wichita.		Ardmore. §§		Bartlesville.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	47	18	13	−13	38	24	51	9	45	25	59	31	68	33	49	26	51	23	55	30	52	26	51	34	70	38	61	29
2....	46	8	23	− 8	54	9	48	10	51	3	43	20	47	35	44	17	46	16	41	22	52	15	41	25	46	40	42	30
3....	64	24	24	14	62	49	41	7	63	30	64	34	66	28	63	30	56	23	52	22	67	35	54	32	65	32	59	27
4....	58	20	21	− 8	51	11	38	9	49	23	58	20	70	37	41	18	51	30	40	21	50	22	42	19	67	35	40	29
5....	20	4	− 8	−21	11	− 5	22	− 2	23	2	20	4	67	45	18	2	43	6	22	11	23	8	20	5	36	28	27	26
6....	5	− 3	7	−29	− 2	−18	8	− 6	6	− 3	4	− 2	24	24	2	− 3	16	− 2	11	7	32	8	5	2	18	15	26	13
7....	8	−13	− 2	−26	9	−25	21	− 2	19	−17	10	− 2	22	16	10	−11	11	0	11	1	10	− 3	11	2	19	10	14	9
8....	23	−12	31	−14	27	−10	20	1	30	−18	32	0	32	10	26	−14	23	−25	21	− 3	25	−11	18	−10	34	− 4	14	− 2
9....	38	− 2	20	1	40	4	42	6	35	− 6	37	8	33	10	33	10	31	5	30	6	36	5	31	12	42	14	25	6
10....	38	0	17	2	44	12	48	4	41	− 1	51	24	41	18	45	11	41	26	35	29	54	25	35	29	41	32	37	25
11....	31	10	11	− 8	24	3	58	10	34	− 2	35	12	47	32	15	3	27	5	35	6	43	17	34	5	43	36	37	18
12....	33	0	19	0	45	2	56	12	44	− 3	48	10	36	18	26	1	20	− 6	22	1	42	30	21	2	36	14	21	6
13....	35	10	35	4	35	16	54	10	43	18	50	25	48	19	24	11	19	7	26	9	35	20	20	11	50	24	37	19
14....	58	24	39	13	52	11	59	14	56	6	55	20	54	26	52	14	45	4	44	7	65	14	45	8	50	26	47	14
15....	54	26	34	9	54	38	48	11	56	24	62	29	64	32	59	31	61	36	58	43	35	20	59	40	65	45	65	43
16....	60	28	19	5	52	28	56	12	46	28	54	42	65	48	56	41	57	38	58	52	45	35	55	49	70	50	65	40
17....	57	18	14	2	50	23	54	17	46	33	61	37	67	60	61	29	55	24	62	33	42	35	59	36	74	60	72	47
18....	63	17	32	7	58	22	64	22	57	14	58	25	67	46	51	20	49	18	47	28	45	20	49	27	65	40	57	32
19....	57	25	25	− 1	56	26	59	19	55	35	65	35	69	45	52	21	54	30	63	30	47	31	54	25	66	45	73	44
20....	39	21	20	−15	29	11	57	16	44	16	48	21	65	45	29	14	30	12	30	13	58	20	25	15	37	35	44	24
21....	56	10	32	10	56	10	68	19	51	− 3	47	15	45	25	49	13	50	14	37	11	27	13	42	12	43	20	47	25
22....	55	16	32	7	51	23	59	20	45	17	56	30	49	25	51	23	46	21	38	24	63	24	37	26	46	34	35	33
23....	48	28	23	0	39	22	64	18	43	18	43	28	61	39	41	22	44	29	43	28	55	28	43	29	56	40	49	31
24....	49	10	26	1	50	16	62	20	49	− 1	54	22	50	42	54	19	53	13	46	24	55	15	46	23	51	40	60	29
25....	58	12	34	10	63	24	62	22	56	16	60	22	60	39	64	21	64	24	55	28	61	27	59	27	65	30	62	28
26....	52	22	26	3	47	22	56	15	46	19	50	29	50	33	50	28	56	26	53	30	64	28	49	32	55	42	55	35
27....	56	17	31	5	60	14	54	21	57	1	61	25	52	34	58	19	58	18	51	22	60	21	53	24	54	32	53	27
28....	57	22	36	8	55	20	61	17	56	14	55	26	60	32	55	25	53	25	42	29	65	26	49	34	55	37	62	36
29....	66	20	32	15	60	28	64	19	59	22	67	30	64	32	69	25	69	29	61	31	70	22	60	33	68	36	70	47
30....	52	29	17	6	46	18	60	19	45	26	46	31	67	33	43	19	59	26	50	29	61	33	53	27	58	48	55	44
31....	39	13	18	11	35	15	58	18	53	6	50	20	57	30	36	13	38	14	30	7	48	17	31	11	50	27	44	24
Mns..	45.9	13.6	22.8	−0.3	43.6	14.3	50.7	12.5	45.3	11.0	48.5	21.6	53.6	32.0	42.8	16.1	44.4	16.4	40.9	20.4	48.0	20.2	40.4	20.8	51.5	32.5	46.8	27.0

Date.	Oklahoma.												Missouri.										Bland-ville, Ky.		Jackson, Tenn.	
	Enid.§§		McAlester.		Mangum.§§		Muskogee.		Oklahoma.		Weatherford.§§		Woodward.		Caruthersville.		Ironton.§§		Lamar.§§		Olden.		Springfield.					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	55	3?	58	44	47	27	65	31	62	37	61	32	58	34	60	29	55	18	57	31	56	29	59	33	56	33	.....	.....
2....	50	32	65	39	50	28	57	34	45	28	50	26	47	20	53	34	39	25	60	26	52	31	43	23	53	30	59	28
3....	48	31	57	31	56	30	58	23	60	34	61	31	67	27	47	26	44	21	52	21	48	20	46	21	41	24	44	29
4....	50	33	62	38	54	29	57	36	47	28	51	31	48	29	64	31	52	20	39	29	58	25	47	25	56	32	.....	.....
5....	40	20	59	33	56	31	41	30	28	15	20	16	32	12	68	35	46	21	28	24	46	26	41	22	67	32	.....	.....
6....	27	7	37	16	48	10	31	16	15	8	18	8	12	4	65	34	30	25	13	12	44	20	22	13	63	32	.....	.....
7....	16	5	19	12	38	6	31	12	15	4	18	3	12	2	37	32	30	19	12	10	26	19	15	9	36	32	.....	.....
8....	15	− 5	32	5	23	1	29	5	30	2	29	− 1	32	−13	34	18	23	13	27	2	31	11	23	5	34	21	.....	.....
9....	25	6	45	13	36	6	32	14	40	12	41	9	42	6	38	20	30	13	35	2	25	15	28	16	36	24	.....	.....
10....	28	12	41	29	37	10	37	27	38	30	38	31	50	30	40	27	41	19	39	12	33	22	40	23	41	28	.....	.....
11....	30	14	43	27	48	20	39	23	37	11	36	16	45	10	56	37	40	23	31	31	42	32	42	9	56	38	.....	.....
12....	35	15	36	12	43	10	33	11	30	7	32	6	.....	2	47	24	28	8	26	4	40	28	28	5	38	16	.....	.....
13....	31	10	50	25	43	10	43	23	39	21	42	20	.....	12	44	24	40	14	35	6	42	12	36	17	37	24	53	28
14....	48	35	57	22	48	21	50	20	49	17	45	15	.....	12	50	27	44	11	50	15	45	16	46	16	43	23	62	23
15....	62	42	56	47	56	32	53	42	63	45	61	36	.....	40	58	33	50	30	58	24	52	34	53	39	54	35	70	35
16....	57	44	67	56	68	40	68	50	62	57	62	50	.....	40	63	50	58	41	63	47	58	48	62	50	60	51	68	52
17....	70	29	72	59	69	42	71	56	71	47	70	46	.....	45	61	55	56	52	68	51	60	51	64	43	58	55	72	54
18....	62	28	67	38	66	40	63	34	58	30	59	27	.....	22	63	46	52	36	53	28	58	30	51	31	55	41	69	44
19....	56	22	65	52	74	41	68	44	63	43	64	49	.....	44	62	37	66	26	69	28	66	39	68	40	61	38	.....	.....
20....	46	12	64	27	66	21	61	26	63	19	60	23	.....	18	65	34	60	56	30	24	63	23	57	15	61	28	70	33
21....	42	14	46	19	36	10	44	19	42	13	43	12	.....	7	39	27	38	12	37	14	38	11	36	14	32	22	70	24
22....	46	33	41	32	44	11	37	29	44	31	38	27	.....	25	38	27	42	19	43	16	33	22	34	26	36	25	47	29
23....	45	26	62	39	68	39	58	37	47	37	45	32	47	28	66	38	54	28	44	25	55	30	49	34	59	35	67	45
24....	48	30	54	39	56	38	50	39	45	26	50	25	55	14	56	41	48	33	46	28	54	34	45	29	48	35	65	43
25....	62	35	64	31	55	21	61	29	62	29	62	25	68	29	59	29	59	19	55	28	58	28	55	32	54	29	57	40
26....	49	25	59	44	61	21	55	39	54	37	45	30	54	27	56	36	61	34	54	28	58	40	53	32	55	37	50	35
27....	50	27	54	30	66	25	52	28	54	26	58	25	61	19	48	32	45	22	46	25	53	23	41	24	47	28	48	33
28....	57	35	54	36	61	24	51	34	53	33	58	34	56	29	51	29	41	27	42	25	43	35	40	28	45	30	48	28
29....	65	36	66	35	60	26	65	31	65	37	69	33	72	31	54	28	57	21	60	27	60	21	62	28	51	27	54	39
30....	55	23	62	48	56	19	59	46	54	30	62	39	62	32	59	42	57	37	55	39	54	41	53	32	57	41	61	42
31....	44	11	50	27	.....	.....	46	26	48	20	50	20	49	17	57	33	39	27	35	24	50	23	33	10	53	30	57	36
Mns..	45.6	23.2	53.7	32.4	52.6a	23.0a	50.5	29.5	47.8	26.3	48.3	25.0	48.4k	21.4	53.5	32.7	46.0	24.8	43.7	22.8	48.4	26.4	44.3	24.0	49.8	31.5	59.6k	36.0k

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 7*—Continued.

Date.	Tennessee.				Arkansas.																Mississippi.					
	Kenton.		Memphis.		Bentonville.		Corning.		Dardanelle.§§		El Dorado.§§		Fort Smith.		Little Rock.		Pine Bluff.§§		Texarkana.§§		Wynne.§§		Clarksdale.§§		Corinth.§§		Greenville.§§	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	57	24	62	36	61	29	.....	.....	61	21	69	29	64	32	63	36	67	27	68	30	60	24	65	29	60	28	67	29
2	55	32	57	34	42	23	.....	.....	46	23	57	35	46	31	54	35	55	28	59	35	54	50	58	30	62	30	58	34
3	42	27	49	31	52	23	.....	.....	57	22	64	32	56	26	58	28	59	28	66	29	53	23	55	30	44	29	58	33
4	63	26	67	42	57	32	.....	.....	60	23	72	34	63	36	68	41	71	30	72	35	67	26	70	31	68	30	71	35
5	68	36	70	50	54	24	.....	.....	66	22	75	46	55	34	67	55	78	40	70	45	70	42	73	44	66	40	74	46
6	63	37	66	36	24	13	.....	.....	37	25	65	63	34	24	55	31	61	46	45	42	44	43	67	62	68	60	71	66
7	43	32	40	29	16	8	.....	.....	32	23	38	36	24	14	32	21	37	33	30	29	37	33	52	40	70	61	52	44
8	45	21	29	21	26	4	.....	.....	27	13	35	18	29	10	25	15	31	14	36	13	26	19	32	24	28	26	34	24
9	39	24	38	25	37	13	.....	.....	32	13	39	20	30	21	34	21	37	20	42	18	36	19	41	24	46	24	42	24
10	43	27	57	35	43	28	.....	.....	42	23	65	24	37	27	41	34	65	24	45	27	53	30	66	27	60	26	66	29
11	59	41	66	40	44	14	.....	.....	38	32	50	36	48	23	57	34	65	35	47	38	64	40	69	39	70	38	68	42
12	56	23	40	29	31	8	.....	.....	47	25	48	30	31	14	35	24	39	28	47	23	34	26	41	32	34	34	39	34
13	38	21	45	27	42	23	.....	.....	46	35	53	24	45	25	47	26	50	24	52	25	30	23	48	26	46	24	50	27
14	48	21	52	33	51	22	.....	.....	48	24	60	25	49	28	50	30	56	24	58	28	48	25	56	26	58	24	60	29
15	58	31	62	45	54	45	.....	.....	63	38	70	29	53	42	61	43	65	28	64	30	62	34	64	30	62	28	67	31
16	61	52	62	53	63	54	.....	.....	65	39	68	49	66	53	67	55	65	37	67	34	57	54	63	44	61	40	63	46
17	61	54	63	54	66	49	.....	.....	62	52	65	56	69	56	62	56	65	49	64	57	60	46	64	52	60	49	64	53
18	57	38	58	51	56	32	.....	.....	59	41	64	55	59	44	59	48	61	55	66	52	57	48	64	56	64	54	66	55
19	64	35	63	51	67	44	.....	.....	70	38	73	52	69	44	69	51	69	46	76	54	65	40	64	48	62	42	67	53
20	67	42	68	33	61	18	.....	.....	63	53	73	62	64	28	64	34	68	57	68	62	60	50	71	60	70	54	71	61
21	45	26	35	30	40	13	.....	.....	44	25	46	34	41	23	41	27	42	31	50	33	36	23	44	34	37	32	43	36
22	41	24	53	30	42	28	.....	.....	45	32	63	34	39	32	49	32	62	30	68	35	61	23	63	33	60	32	63	36
23	66	39	65	52	56	41	.....	.....	62	33	74	39	59	39	64	48	70	35	68	48	68	41	71	35	64	32	70	39
24	57	38	55	41	52	37	.....	.....	57	44	54	44	53	41	56	45	53	46	57	46	49	45	50	50	52	52	55	54
25	54	31	54	40	58	31	.....	.....	58	37	63	37	59	32	61	38	63	35	64	37	55	30	58	37	46	42	60	41
26	54	32	49	39	56	35	.....	.....	55	35	50	36	54	39	54	41	52	34	51	39	53	34	49	35	48	34	53	37
27	47	30	45	35	45	25	.....	.....	52	37	52	42	48	32	50	35	50	39	53	39	45	36	43	35	41	34	49	43
28	45	26	49	36	46	30	.....	.....	55	29	67	30	52	32	54	33	60	30	60	30	52	31	56	32	52	28	57	36
29	52	26	55	35	63	30	.....	.....	66	27	62	29	65	31	60	33	63	28	64	29	48	23	59	31	53	30	60	32
30	60	41	60	44	55	31	.....	.....	57	35	65	30	61	39	62	43	64	28	69	35	60	43	63	31	60	30	63	33
31	60	33	47	35	40	15	.....	.....	48	33	52	34	42	28	48	34	51	34	54	33	45	33	50	37	46	40	51	40
Mns.	53.8	31.9	54.2	37.8	48.4	26.5	.....	.....	52.3	30.7	59.7	36.9	50.5	31.6	53.8	36.4	57.9	33.6	58.1	35.8	51.9	34.1	57.7	36.9	55.4	36.4	59.1	39.4

Date.	Mississippi.						Louisiana.																			
	Kosciusko.§§		Natchez.§§		Vicksburg.		Alexandria.§§		Baton Rouge.§§		Covington.§§		Lafayette.§§		Lake Charles.§§		Monroe.§§		New Orleans.		Robeline.§§		Schriever.§§		Shreveport.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	65	28	63	35	66	41	68	35	70	46	70	42	71	43	75	33	72	31	71	44	73	38	74	44	70	36
2	68	31	46	56	65	39	65	35	66	57	71	53	73	47	80	40	61	53	72	46	61	42	76	46	57	37
3	56	30	53	33	60	35	65	32	65	36	65	36	66	33	81	45	63	34	64	40	69	25	66	36	66	36
4	69	32	70	47	70	46	70	34	70	51	70	38	72	35	85	47	73	40	70	51	74	35	73	36	72	48
5	71	44	72	45	75	62	73	48	75	55	75	47	73	32	88	50	74	60	75	58	75	53	77	51	73	60
6	70	60	75	64	74	63	74	62	78	68	78	62	78	65	87	60	76	68	77	67	72	63	80	63	67	33
7	74	62	45	68	74	32	62	50	75	69	68	66	75	65	75	59	51	48	77	54	38	37	78	69	34	21
8	35	28	35	27	37	27	50	24	69	34	66	40	44	29	46	22	48	23	74	40	32	19	53	38	32	16
9	45	26	53	30	45	30	46	23	51	36	55	38	55	29	49	29	44	26	48	40	43	19	51	38	39	23
10	64	29	68	42	65	41	67	33	69	43	73	37	68	37	50	36	67	39	72	46	60	27	75	41	64	37
11	71	44	45	64	74	54	73	45	76	65	75	54	72	50	52	38	69	56	77	62	43	43	72	51	67	38
12	42	48	55	30	54	36	48	38	65	49	64	54	53	46	60	39	44	36	70	49	35	33	60	54	43	30
13	53	28	51	30	52	33	58	31	67	37	54	39	62	37	67	40	55	28	56	44	38	31	60	44	54	29
14	60	24	65	35	61	38	64	31	68	40	70	41	67	37	69	42	61	31	59	45	64	25	67	44	60	35
15	66	31	67	45	71	47	70	37	74	46	77	43	73	41	59	44	72	42	67	50	74	38	77	46	68	51
16	73	42	65	52	66	51	73	46	71	56	67	48	79	53	58	40	68	51	69	54	71	50	70	49	72	57
17	67	50	67	45	70	62	73	55	75	62	73	58	73	59	59	39	66	62	74	61	71	58	78	50	71	62
18	69	56	71	59	74	62	74	60	76	60	64	60	70	62	57	40	68	60	66	59	78	63	68	62	67	55
19	65	56	70	62	71	60	75	61	78	58	73	56	80	59	56	37	71	54	72	58	76	67	75	55	73	56
20	73	57	65	55	70	42	75	61	76	61	79	59	77	60	58	36	76	63	79	61	78	63	79	58	73	39
21	44	37	55	40	48	40	60	40	60	47	66	52	58	48	60	39	45	38	65	54	51	38	68	57	46	36
22	63	36	61	35	63	40	65	40	67	48	66	47	66	47	62	40	63	38	64	50	65	38	67	52	57	40
23	67	37	65	40	67	61	71	43	73	64	75	52	73	50	65	42	71	52	76	63	73	42	78	54	73	57
24	64	59	65	60	65	48	70	62	66	65	68	62	72	63	68	45	59	56	74	64	66	56	74	64	60	52
25	61	45	65	45	61	48	64	47	71	56	68	58	67	56	70	47	61	46	64	58	64	44	69	61	61	43
26	53	33	55	43	53	46	60	47	63	58	68	54	59	52	72	50	53	43	74	59	51	40	72	59	51	44
27	50	42	35	35	50	40	55	45	59	47	55	48	56	46	74	52	55	45	64	47	55	45	50	50	53	40
28	55	28	55	29	58	35	62	33	63	37	60	32	63	33	80	55	59	32	61	42	63	28	64	34	59	37
29	60	31	43	31	59	40	62	33	65	39	65	32	64	37	70	47	64	32	61	47	66	27	69	35	63	36
30	65	31	61	30	65	44	67	35	71	47	68	35	70	42	71	45	65	43	70	47	68	27	72	40	68	45
31	51	40	45	45	60	43	55	44	62	51	62	39	57	47	73	46	54	40	62	48	54	38	60	51	53	37
Mns.	60.9	39.3	59.9	43.8	62.7	44.7	65.0	42.3	68.8	51.2	68.0	47.8	67.3	46.5	67.0	42.7	62.2	44.2	67.9	51.9	61.4	40.4	69.4	49.4	60.2	40.8

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 8, TEXAS AND RIO GRANDE VALLEY.

B. BUNNEMEYER, District Editor.

GENERAL SUMMARY.

The month was cold, with much cloudy and disagreeable weather and about the normal amount of precipitation. In the western portion of the district both minimum and mean temperatures were the lowest of record for January. In Texas the temperatures were more moderate, and in the eastern portion of that State the month averaged warmer than normal. The period of extreme cold was of short duration in Texas, and although freezing weather occurred in all parts of the State on the 7th or 8th very little damage was done to truck along the Texas coast, and in general the month was unusually favorable for early truck growing.

There was practically no precipitation over the extreme upper portion of the Brazos and Colorado watersheds and over the lower portion of the Pecos, but elsewhere the moisture was ample for all purposes. The monthly amounts were in excess of the normal in the middle Rio Grande Valley and in the eastern portions of Texas. In the latter section the ground was still soaked from the heavy rains in December, and the damp and cloudy weather of January prevented the soil from drying out and thus delayed farm work. The only severe storm of the month was that of the 5th–7th, which gave heavy snows in the mountain districts and snow or sleet in north Texas. Precipitation occurred nearly daily at some stations near the coast, but elsewhere it was of about the usual frequency. The average number of days with 0.01 inch or more of precipitation was 4 in Colorado, 3 in New Mexico, and 5 in Texas.

The greatest and least monthly amounts of precipitation were, respectively, in Colorado, 2.07 inches at Platoro and 0.03 inch at Blanca; in New Mexico, 2.85 inches at Placitas and 0.01 inch at Lakewood; and in Texas, 6.88 inches at Alvin and a trace at five stations, while at eight others there was none. Excessive precipitation of 2.50 inches or more in 24 consecutive hours occurred at three stations in Texas, the heaviest amount being 3.31 inches at Mont Belvieu, on the 26th. The greatest monthly snowfall in Colorado was 26.2 inches at Platoro; in New Mexico, 33.5 inches at Anchor Mine; and in Texas, 2.1 inches at El Paso.

TEMPERATURE.

The monthly mean temperature was 4.1° below the normal in Colorado, 4.3° below in New Mexico, and 0.3° below in Texas. The month opened warm, but between the 7th and 9th a cold wave overspread the district, which gave freezing weather to the Texas coast and temperatures ranging from zero to 33° below zero in Colorado and New Mexico. During the latter half of the month moderate temperatures prevailed, except that it was cold again on the 21st and 22d. The coldest weather occurred during the cold wave of the 7th, and the warmest between the 1st and 6th, 17th and 19th, and 26th and 31st. The warm periods were, however, poorly defined and the highest temperature was well below the normal for the month. The average daily range of temperature varied from 11° on the Texas coast to 35° in the middle Pecos Valley.

The highest and lowest temperatures reported were, respectively, in Colorado 50° at Saguache on the 4th and 27th, and −33° at Hermit on the 7th; in New Mexico, 76° at Carlsbad on the 4th, and −32° at Willard on the 8th; and in Texas, 87° at Falfurrias on the 5th and at Fort McIntosh on the 6th, and −1° at Plainview on the 8th. The local monthly means ranged from 8.9° to 17.0° in Colorado, from 12.9° to 42.2° in New Mexico, and from 38.6° to 59.0° in Texas.

PRECIPITATION.

The monthly precipitation for the Rio Grande watershed as a whole averaged about normal and was well distributed. Above Marathon, Tex., it was nearly all in the form of snow.

The Rio Pecos watershed received more than the average amount of moisture above Cloudcroft, N. Mex., but there was a decided deficiency south of Artesia, N. Mex. There was practically no precipitation in the Texas portion of this watershed.

Of the Texas watersheds, those of the Colorado, Trinity, and Brazos received slightly more than the normal amount of precipitation, the excesses ranging from 0.18 inch for the Colorado drainage basin to 0.66 inch for that of the Neches. The Colorado, however, received little or no moisture in its extreme upper portion. The remaining Texas watersheds showed deficiencies of precipitation which ranged from 0.05 inch for the Brazos to 1.02 inches for the Nueces. The following are the monthly amounts in inches and hundredths for the various Texas watersheds: Nueces, 0.59; San Antonio, 0.78; Guadalupe, 1.03; Lavaca, 1.36; Colorado, 1.03; Brazos, 1.39; Trinity, 2.69; Neches, 3.92; Sabine, 3.24; and coastal plains, 2.23.

RIVER CONDITIONS.

The streams of the district remained practically at low-water mark throughout the month. A slight rise occurred in the lower Trinity between the 26th and 31st.

SNOWFALL IN THE MOUNTAINS.

While the month had about the normal amount of precipitation in Colorado and New Mexico, the total fall of snow was considerably above the normal, as practically all the moisture was in the form of snow. On account of the unusually cold weather there was but little melting at the higher altitudes. At the lower levels the melting was slow and resulted in some benefit, as it reduced the amount of water reaching the trunk streams and gave much soil moisture. At the close of the month the ground was generally bare at the lower levels, and the stored depth at the higher levels was still below the normal over both the Rio Grande and Rio Pecos watersheds, but it was greater than at the close of December. In the extreme upper Rio Grande watershed the average depth at an elevation of 9,400 feet was 10 inches, or 4 inches less than at the corresponding date of last year.

TABLE 1.—*Climatological data for January, 1913. District No. 8, Texas and Rio Grande Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Colorado.																				
Blanca	Costilla	7,865	4	14.8	.....	44	27	− 26	7†	51	0.03	.....	0.03	3.0	1	23	3	5	w.	Lewis F. Botens.
Cumbres	Conejos	10,015	6	.....	.....	.....	.....	.....	.....	.....	1.67	.....	0.66	23.3	6	17	11	3	sw.	Mrs. Ida M. Lively.
Garnett	Costilla	7,576	20	11.8	− 6.1	43	26	− 31	7	47	0.54	+ 0.43	0.53	6.5	2	13	11	7	nw.	Chas. Speiser.
Hermit	Hinsdale	9,843	6	8.9	.....	42	3	− 33	7	54	0.57	.....	0.17	7.5	6	20	3	8	.....	Marion Mason.
La Veta Pass	Costilla	9,000	3	.....	.....	.....	.....	.....	.....	.....	1.48	.....	1.20	20.2	2	21	6	4	.....	Clara M. Wright.
Manassa	Conejos	7,700	7	14.6	.....	46a	28	− 32a	8	50a	0.17	.....	0.17	3.0	1	21a	5a	4a	sw.	J. B. Chapman.
Platoro	do	7,675	6	.....	.....	.....	.....	.....	.....	.....	2.07	.....	0.60	26.2	9	18	4	9	w.	Walter R. Hook.
Saguache	Saguache	7,740	21	17.0	− 2.7	50	4†	− 21	8	51	0.30	+ 0.14	0.30	4.0	1	16a	3a	11a	w.	Eugene Williams.
San Luis	Costilla	7,794	22	14.8	− 7.0	46	25	− 31	8	57	0.84	+ 0.44	0.65	8.6	4	19	11	1	sw.	P. B. Albright.
Wagon Wheel Gap Experiment Station.	Mineral	9,235	2	13.4	− 0.5	41	3	− 22	6†	39	0.73	+ 0.07	0.32	10.5	7	22	3	6	nw.	U. S. Weather Bureau.
New Mexico.																				
Agricultural College	Dona Ana	3,863	51	36.8	− 5.4	68	4	− 8	8	49	0.49	+ 0.17	0.30	5.0	2	18	7	6	nw.	N. M. Agricultural College.
Alamogordo (near)	Otero	4,338	16	37.7a	− 6.3	63	17†	− 8	8	39	0.57	+ 0.01	0.52	8.2	3	21	6	4	s.	Edward LeBreton.
Alamogordo	do	4,320	4	.....	.....	.....	.....	− 10	8	.....	0.49	.....	0.39	7.8	2	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Alamos Ranch	Sandoval	7,800	3	.....	.....	.....	.....	.....	.....	.....	1.74	.....	1.53	18.0	2	28	0	3	sw.	Harold H. Brook.
Albuquerque	Bernalillo	5,000	37	.....	.....	.....	.....	− 11	8	.....	0.78	+ 0.39	0.56	8.8	4	21	6	4	.....	Pitt Ross, C. E.
Ancho	Lincoln	6,112	4	.....	.....	.....	.....	.....	.....	.....	0.84	.....	0.49	12.0	3	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Anchor Mine	Taos	10,600	2	.....	.....	.....	.....	.....	.....	.....	1.72	.....	0.54	33.5	6	9	14	8	w.	Charles H. Brigham.
Artesia	Eddy	3,350	5	38.8	.....	73	1	− 11	8	51	0.09	.....	0.09	2.0	2	22	1	8	sw.	Will Benson, C. E.
Aspen Grove Ranch	Rio Arriba	9,000	4	.....	.....	.....	.....	.....	.....	.....	1.28	.....	0.46	20.7	7	14	13	4	.....	Junius D. Maupin.
Batemans Ranch	do	8,900	4	.....	.....	.....	.....	.....	.....	.....	1.57	.....	0.64	17.1	6	19	8	4	w.	John W. Batemen.
Berino	Dona Ana	3,788	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. Rishaberger.
Bluewater	Valencia	6,732	11	24.8	− 4.2	64	25	− 19	7†	59	0.12	− 0.20	0.12	2.0	1	20	7	4	w.	Bluewater Development Co.
Boaz	Chaves	4,154	4	36.8	.....	74	4	− 20	8	52	0.26	.....	0.20	4.0	2	25	4	2	sw.	William Horner.
Capitan	Lincoln	6,348	4	.....	.....	.....	.....	.....	.....	.....	1.66	.....	0.96	26.0	3	15	9	7	w.	Agent E. P. & S. W. R. R.
Carlsbad	Eddy	3,120	18	42.2	− 2.8	76	4	− 3	8	51	0.18	− 0.12	0.18	1.5	2	20	8	3	se.	U. S. Reclamation Service.
Carrizozo	Lincoln	5,429	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Cerrillos (near)	Santa Fe	5,700	1	23.9	.....	59	4	− 21	8	50	1.22	.....	0.80	17.2	4	17	10	4	w.	Irving C. Sweet.
Chama	Rio Arriba	7,851	15	17.2	− 5.8	44	26†	− 21	8	49	1.57	− 0.54	0.98	23.0	5	23	7	1	sw.	Frank C. Johnson.
Cloudcroft	Otero	8,650	11	30.8	+ 1.0	50	4	− 4	7	40	1.13	− 0.45	0.77	16.0	4	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Corona	Lincoln	6,666	4	30.6	.....	54	3	− 12	7	46	1.80	.....	0.96	28.0	3	23	6	2	sw.	Do.
Coyote	do	5,800	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Cundiyo	Santa Fe	6,889	4	.....	.....	.....	.....	.....	.....	.....	0.54	.....	0.27	10.0	3	23	4	4	w.	Juan Vijil.
Demonstration Farm	San Miguel	6,800	4	.....	.....	.....	.....	.....	.....	.....	0.29	.....	0.23	4.0	2	.....	.....	.....	.....	Erb & Westerman.
Duran	Torrance	6,272	4	32.8	.....	58	18	−6	7	46	0.74	.....	0.38	12.0	2	23	5	3	.....	Agent E. P. & S. W. R. R.
Escondido	Otero	4,014	4	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.28	7.5	3	23	4	4	nw.	Do.
Espanola	Rio Arriba	5,590	15	31.0	− 9.0	53	5	− 23	9	41	0.37	+ 0.06	0.14	5.5	4	21	7	3	n.	Mrs. Ella F. McBride.
Estancia	Torrance	6,140	8	23.0	.....	64	20	− 30	9	47	1.06	+ 0.45	0.98	15.0	3	23	3	5	w.	Geo. H. Van Stone.
Fort Stanton	Lincoln	6,231	36	33.2	− 2.4	60	17†	− 20	7	60	1.04	+ 0.54	1.00	14.5	3	23	4	4	nw.	U. S. Sanitarium.
Fort Sumner	Guadalupe	3,960	5	32.0	.....	68	2†	− 22	8	57	0.16	.....	0.16	3.0	2	19	7	5	nw.	Peter Yocky.
Gallinas	Lincoln	6,635	4	.....	.....	.....	.....	.....	.....	.....	0.78	.....	0.40	15.0	2	25	1	5	w.	Agent E. P. & S. W. R. R.
Gallinas Planting Sta	San Miguel	7,500	6	28.3	.....	60	3	− 20	7	57	0.79	.....	0.42	10.8	5	19	6	6	sw.	U. S. Forest Service.
Glorieta Ranch	Socorro	5,700	3	.....	.....	.....	.....	.....	.....	.....	0.71	.....	0.40	10.0	2	24	2	5	s.	Chas. M. Crossman.
Harvey's Upper Ranch	San Miguel	9,400	4	24.0	.....	45	3†	− 10	7	42	0.60	.....	0.35	10.0	6	20	6	5	w.	R. B. Schoonmaker.
Hobbs	Eddy	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.03	.....	0.03	0.5	2	20	5	6	sw.	E. H. Byers.
Hondo Reservoir	Chaves	3,904	4	36.2	.....	73	4	− 20	8	48	0.44	.....	0.44	8.5	2	26	3	2	n.	U. S. Reclamation Service.
Jemez Springs	Sandoval	6,100	3	26.3	.....	53	3	− 13	7	40	0.80	.....	0.50	12.0	5	18	6	7	sw.	Mrs. L. L. Shields.
Knowles (near)	Eddy	4,300	3	39.0	.....	70	4†	− 1	8	46	0.03	.....	0.03	0.3	1	23	4	4	sw.	J. W. Mosley.
Laguna	Valencia	5,840	8	27.6	.....	56	4	− 11	8	42	0.60	+ 0.38	0.32	8.0	2	.....	.....	.....	w.	Gus Weiss.
Lagunita	Guadalupe	4,500	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. A. Turnbull.
Lake Valley	Sierra	5,412	8	.....	.....	.....	.....	− 4	6	.....	0.73	.....	0.42	12.0	5	22	6	3	sw.	William P. Keil.
Lakewood (near)	Eddy	3,170	1	39.4	.....	73	4	− 11	8	54	0.01	.....	0.01	0.2	1	29	1	1	se.	Mrs. J. K. Boyd.
Lanark	Dona Ana	4,156	14	.....	.....	.....	.....	.....	.....	.....	0.38	+ 0.10	0.16	5.0	5	23	1	7	e.	Agent So. Pac. R. R.
Las Vegas	San Miguel	6,385	26	28.6	− 4.8	65	30	− 20	7	54	0.48	+ 0.06	0.33	4.7	3	26	3	2	sw.	New Mexico Normal Univ.
Liston	Chaves	5,000	3	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.30	3.0	1	14	14	3	sw.	H. G. Liston.
Los Lunas (near)	Valencia	4,900	24	25.8	− 6.2	63	4	− 20	9	49	0.73	+ 0.09	0.51	6.8	2	14	15	2	.....	Richard Pohl.
Magdalena	Socorro	6,557	8	29.0	.....	55	19	− 4	8	36	0.56	.....	0.28	8.0	2	17	11	3	w.	William Pender.
Mescalero	Otero	6,627	2	30.8	.....	56	3	−10	8	46	0.64	.....	0.41	10.7	5	19	6	6	sw.	Rev. R. H. Harper.
Mineral Hill	San Miguel	7,050	8	.....	.....	.....	.....	.....	.....	.....	0.39	.....	0.36	6.5	3	0	28	3	sw.	W. M. Nelson.
Monterey	Otero	4,436	4	.....	.....	.....	.....	.....	.....	.....	0.33	.....	0.33	6.0	2	22	0	9	.....	Agent E. P. & S. W. R. R.
Mountainair	Torrance	6,547	11	24.0	− 9.7	50	19	−21	7	49	1.15	+ 0.49	0.52	14.8	3	16	9	6	sw.	Miss Julia Hill.
Mountain Park	Otero	.....	1	.....	.....	.....	.....	.....	.....	.....	1.13	.....	0.80	13.0	4	.....	.....	.....	.....	Charles E. Beasley.
Newman	do	3,989	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Noria	Dona Ana	4,114	4	.....	.....	70	4†	− 6	8	.....	0.18	.....	0.18	2.0	1	25	0	6	w.	Do.
Orogrande	Otero	4,171	4	.....	.....	68	4	−11	8	.....	0.39	.....	0.39	5.5	1	18	10	3	w.	Do.
Oscura	Lincoln	5,016	4	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.46	8.5	2	.....	.....	.....	.....	Eugene F. Jones.
Otis	Eddy	3,100	4	.....	.....	.....	.....	.....	.....	.....	0.17	.....	0.12	2.0	2	23	4	4	nw.	A. M. Hove.
Otto	Santa Fe	6,200	4	.....	.....	.....	.....	.....	.....	.....	1.29	.....	0.80	17.0	4	.....	.....	.....	.....	Benjamin Lasswell.
Pastura	Guadalupe	5,285	4	.....	.....	58	4†	−10	7	.....	0.42	.....	0.42	8.0	2	24	1	6	sw.	Agent E. P. & S. W. R. R.
Placitas (near)	Bernalillo	8,000	2	26.6	.....	48	18†	− 7	8	42	2.85	.....	1.95	24.0	4	19	10	2	w.	George C. Ellis.
Plainview (near)	Chaves	4,300	2	37.4	.....	67	1†	− 3	8	44	0.13	.....	0.13	2.0	2	19	7	5	sw.	L. P. Adair.
Red River Canyon	Taos	8,956	6	12.9	.....	42	3	−26	8	46	1.70	.....	0.80	28.0	6	18	10	3	e.	Mrs. L. R. Penn.
Rincon	Dona Ana	4,030	19	37.8	− 3.9	68	16	−10	8	50	0.60	+ 0.20	0.35	7.0	2	12	15	4	nw.	Charles H. Raitt.
Rio Grande Dam	Sierra	4,265	23	36.6	− 3.3	65	17†	− 2	9	43	0.77	+ 0.53	0.47	8.0	3	23	3	5	sw.	U. S. Reclamation Service.
Rio Grande Industrial School.	Bernalillo	5,000	2	26.7	.....	64	16	−15	8	47	0.95	.....	0.75	5.5	2	20	6	5	sw.	Rev. A. C. Heyman.
Rosedale	Socorro	6,910	8	31.4	.....	58	3	−10	7	38	0.60	.....	0.30	8.0	3	23	5	3	w.	Mrs. J. J. MacInness.
Roswell	Chaves	3,578	19	34.8	− 4.4	74	4	−19	8	49	0.60	+ 0.07	0.48	7.0	2	17	9	5	n.	U. S. Weather Bureau.
San Marcial	Socorro	4,430	16	35.4	.....	73	1	− 9	8	58	0.45	.....	0.30	6.0	2	26	2	3	se.	Agent A., T. & S. F. R. R.
San Rafael	Valencia	6,509	16	27.0	.....	58	3	−10	8	46	0.23	− 0.17	0.14	3.8	4	23	0	8	se.	Dr. Charles M. Grover.
Santa Fe	Santa Fe	7,013	40	24.8	− 3.7	49	4	−12	7	36	0.57	− 0.02	0.30	8.7	5	17	10	4	n.	Section Center.
Santa Fe Canyon	do	8,000	3	.....	.....	.....	.....	.....	.....	.....	0.76	.....	0.35	11.5	4	23	4	4	e.	Mrs. E. M. Gregory.
Santa Rosa	Guadalupe	4,624	12	34.1	.....	63	4	−10	7	42	0.40	− 0.06	0.30	5.5	2	22	5	4	w.	H. V. B. Smith, C. E.
Senorito (near)	Sandoval	7,500	1	19.4	.....	49	25	−23	7	58	0.74	.....	0.46	12.0	5	15	7	9	w.	James Curry.
Socorro	Socorro	4,600	21	36.8	− 0.9	71	31	−13	9	48	0.43	− 0.02	0.23	6.0	3	28	0	3	se.	J. J. Leeson.
Stanley	Santa Fe	6,317	4	23.5e	.....	55	4	−27	7	47	0.79	.....	0.62	8.5	3	20	9	2	nw.	George R. Camp.
Tajique (near)	Torrance	9,800	3	.....	.....	.....	.....	.....	.....	.....	1.35	.....	0.39	29.0	5	16	12	3	.....	A. Rea.
Taos	Taos	6,983	18	21.6	− 5.6	50	28	−20	8	45	0.31	− 0.47	0.20	7.0	5	18	9	4	w.	Alexander Gusdorf.
Taos Canyon	do	8,959	4	.....	.....	.....	.....	.....	.....	.....	0.64	.....	0.22	10.5	5	.....	.....	.....	.....	L. Martinez, jr.
Tecolote	Lincoln	6,539	4	29.8	.....	52	3	− 6	7	40	1.23	.....	0.63	18.0	4	23	2	6	w.	Agent E. P. & S. W. R. R.
Three Rivers	Otero	4,559	4	.....	.....	.....	.....	.....	.....	.....	0.65	.....	0.57	8.0	2	25	1	6	sw.	Do.
Tijeras Canyon	Bernalillo	6,214	3	.....	.....	.....	.....	.....	.....	.....	1.03	.....	0.50	23.0	4	12	13	6	w.	U. S. Forest Service.
Torrance	Torrance	6,433	4	.....	.....	55	19	−10	6	.....	1.20	.....	0.68	16.0	3	28	0	3	sw.	Agent E. P. & S. W. R. R.
Tres Piedras	Taos	8,076	10	15.8	.....	45	3	−25	8	48	0.85	− 0.25	0.85	15.0	2	23	3	5	w.	U. S. Forest Service.

TABLE 1.—*Climatological data for January, 1913. District No. 8*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
New Mexico—Contd.																				
Truchas	Rio Arriba	7,935	4	22.0	.....	48	29	−10	8	45	0.65	.....	0.29	11.4	5	16	9	6	w.	Miss Myrtle Rendon.
Tularosa	Otero	4,436	4	35.2	.....	62	1	− 4	8	37	0.34	.....	0.32	7.0	2	16	10	5	n.	Irby L. Fairless.
Vaughn	Guadalupe	5,952	4	.....	.....	.....	.....	−10	6	.....	0.54	.....	0.28	8.0	3	25	0	6	sw.	Agent E. P. & S. W. R. R.
Virsylvia	Taos	7,500	3	15.9	.....	46	31	−28	7	48	0.44	.....	0.22	6.5	4	19	8	4	sw.	Dr. I. N. Woodman.
Willard	Torrance	6,086	1	25.6	.....	55	4†	−32	8	55	1.02	.....	0.58	13.8	3	24	0	7	sw.	Dr. V. S. Cheyney.
Winsors	San Miguel	8,200	17	27.4	+ 0.1	50	3†	−16	7	51	1.00	− 0.19	0.45	15.5	6	14	15	2	sw.	James F. Matty.
Texas.																				
Abilene	Taylor	1,738	28	44.2	+ 1.6	76	17	9	8	38	0.25	− 0.65	0.11	0.4	5	12	7	12	s.	U. S. Weather Bureau.
Albany	Shackelford	1,429	19	41.9	− 1.3	76	19	2	8	45	0.50	− 0.52	0.21	0	3	18	4	9	.....	N. L. Bartholomew.
Alice	Jim Wells	209	2	55.8	.....	82	5	26	8	39	1.10	.....	0.45	0	5	9	2	20	n.	R. M. Boerum.
Alpine	Brewster	4,482	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	24	0	7	w.	H. B. Cowles.
Alvin	Brazoria	49	15	51.7	.....	77	19	23	8	33	6.88	+ 3.66	2.40	0	6	8	1	22	n.	Alvin Japanese Nursery.
Anahuac	Chambers	23	4	.....	.....	.....	.....	.....	.....	.....	3.53	.....	1.98	0	10	.....	.....	.....	.....	.....
Antelope	Jack	.....	2	.....	.....	.....	.....	.....	.....	.....	1.49	.....	0.97	0.2	4	15	9	7	.....	Paul Rudolph.
Aspermont	Stonewall	.....	2	.....	.....	.....	.....	.....	.....	.....	0.13	.....	0.13	0	1	25	1	5	sw.	Bryant Link Co.
Austin	Travis	593	57	51.1	+ 2.0	73	3†	18	6†	43	1.26	− 0.76	0.70	T.	6	12	8	11	nw.	A. Deussen.
Ballinger	Runnels	1,637	17	45.8	+ 0.4	85	1	9	8	54	1.01	+ 0.35	0.66	0	4	15	2	14	n.	E. M. Eubank.
Barstow	Ward	2,573	6	45.8	.....	77	5	6	8	51	0.00	.....	0.00	0	0	26	3	2	w.	F. P. Ingerson.
Bay City	Matagorda	53	3	56.3	.....	81	25	25	8	37	1.71	.....	1.24	0	7	30	0	1	n.	E. C. Quereau.
Beaumont	Jefferson	29	12	55.6	+ 1.4	75	18	23	8	38	6.64	+ 3.94	3.16	0	10	13	0	18	se.	John Bender.
Beeville	Bee	225	17	55.6	+ 0.4	82	20	25	8	42	0.58	− 0.51	0.23	0	9	13	2	16	n.	L. E. Dickey.
Big Springs	Howard	2,396	15	44.7	− 2.7	78	4	8	8	43	0.29	− 0.10	0.19	T.	2	18	6	7	s.	B. Reagan.
Blanco	Blanco	1,350	17	51.4	+ 2.6	80	17†	14	7	48	1.45	+ 0.36	0.98	T.	5	16	10	5	s.	R. C. Crist.
Boerne	Kendall	1,412	21	50.2	+ 0.5	76	17	17	7	44	1.21	− 0.19	0.52	0	11	9	1	21	n.	F. W. Schweppe.
Booth	Fort Bend	81	12	.....	.....	.....	.....	.....	.....	.....	2.23	+ 0.51	0.90	0	8	11	0	20	n.	T. R. Booth.
Bowie	Montague	1,113	18	43.8	− 1.1	78	17	1	8	37	1.48	+ 0.57	0.94	0.5	4	12	2	17	n.	Craig Anderson.
Brady	McCullough	1,500	12	51.0	.....	80	4	10	7	42	1.45	− 0.06	0.75	.....	3	18	1	12	s.	Prof. J. O. Wallace.
Brazoria	Brazoria	25	24	57.2	+ 2.6	78	20	25	7	39	2.94	− 1.07	1.90	0	12	13	3	15	n.	Mrs. M. A. Stevens.
Brazos	Palo Pinto	801	4	.....	.....	.....	.....	.....	.....	.....	1.05	.....	0.52	1.0	4	10	9	12	n.	Robert E. Boyett.
Brenham	Washington	350	28	50.4	− 1.2	77	20	20	7†	31	1.92	− 1.57	0.61	0	11	9	6	16	n.	Mrs. B. F. Sloan.
Bridgeport	Wise	754	4	.....	.....	.....	.....	.....	.....	.....	1.55	.....	0.90	0	4	8	4	19	n.	Claud Strange.
Brighton	Nueces	12	20	56.5	− 1.3	80	25	27	7	45	1.93	+ 0.66	1.55	0	3	12	4	15	nw.	G. H. Ritter.
Brownsville	Cameron	38	49	58.6	− 0.5	79	18	30	7	39	2.05	+ 0.72	1.16	0	14	.....	.....	.....	n.	U. S. Weather Bureau.
Brownwood	Brown	1,342	21	45.4	− 2.1	80	4	10	8	47	1.46	+ 0.15	0.60	0.5	5	13	5	13	s.	Mrs. Pearl Smith.
Buena Vista	Pecos	.....	1	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	W. H. Denis.
Cameron	Milam	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. E. Watts.
Carmona	Polk	330	5	52.1	.....	79	18	18	8	46	3.29	.....	0.93	0	12	10[a]	7[a]	13[a]	s.	M. S. Spitler.
Carrizo Springs	Dimmit	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. E. Cook.
Claytonville	Fisher	2,100	18	45.6	+ 1.2	76	17	6	8	60	0.15	− 0.50	0.08	0	3	15	6	10	sw.	William Lanius.
Clifton	Bosque	671	2	.....	.....	.....	.....	.....	.....	.....	2.36	.....	0.78	0.5	9	15	3	13	n.	R. M. Jones.
Coleman	Coleman	1,710	19	47.8	+ 1.2	78	4	10	7†	39	1.35	+ 0.39	0.69	0.4	4	14	8	9	sw.	J. E. Stevens.
Collegeport	Matagorda	.....	1	51.8	.....	76	20	22	7†	34	.....	.....	.....	.....	.....	8	14	9	nw.	H. A. Clapp.
College Station	Brazos	308	23	51.7	+ 0.5	77	20	18	7	48	2.98	− 0.56	0.95	0	12	12	3	16	s.	Prof. G. S. Fraps.
Colorado	Mitchell	2,066	19	.....	.....	76[b]	1†	2	8	.....	0.77	+ 0.29	0.42	0	3	.....	.....	.....	.....	R. M. Webb.
Columbus	Colorado	206	9	.....	.....	.....	.....	.....	.....	.....	1.73	.....	0.48	0	9	8	4	19	n.	Mrs. Sophie Bridge.
Corpus Christi	Nueces	20	26	54.4	+ 0.9	76	30	27	7	36	0.92	− 1.33	0.57	0	12	9	4	18	se.	U. S. Weather Bureau.
Corsicana	Navarro	445	24	44.4	− 2.6	70	4†	14	8†	37	2.30	− 0.19	0.79	0	7	13	4	14	n.	D. H. Winn.
Cotulla	La Salle	425	6	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.20	0	2	.....	.....	.....	.....	Holland Agricultural Co.
Crockett	Houston	350	9	51.3	.....	75	20	16	8	41	3.40	.....	0.79	0	7	13	4	14	n.	A. M. Rencher.
Cuero	De Witt	177	23	52.4	− 1.3	82	20	24	7†	36	1.16	− 0.75	0.53	0	7	14	0	17	n.	H. R. Frobese.
Dallas	Dallas	466	24	45.5	+ 0.5	77	4	10	8†	41	3.37	+ 0.61	1.95	1.0	6	19	0	12	n.	G. A. Eisenlohr.
Danevang	Wharton	145	17	54.6	+ 0.5	78	19	24	7	36	1.40	− 1.40	1.10	0	2	16	5	10	n.	H. P. Hermansen.
Del Rio	Valverde	952	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Weather Bureau.
Devine	Medina	653	3	53.0	.....	80	5	22	7	37	1.02	.....	0.40	0	4	14	5	12	n.	M. A. Keller.
Dialville	Cherokee	575	9	50.0	.....	72	20	13	8	47	3.12	.....	1.15	0	7	12	4	15	n.	J. M. B. McKnight.
Dilley	Frio	569	3	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.30	0	1	.....	.....	.....	.....	John W. Miller.
Dublin	Erath	1,466	17	43.9	− 1.7	77	3	6	8	43	2.12	+ 0.92	0.71	1.0	7	11	8	12	s.	Jno. O. Shafer.
Duval	Travis	820	24	50.1	− 1.1	73	3	11	8	40	2.05	+ 0.49	1.32	0	5	19	2	10	nw.	J. C. Edgar.
Eagle Pass	Maverick	800	36	52.8	− 0.6	82	30	19	8	50	0.34	− 0.37	0.24	0	2	11	8	12	n.	Charles Tarver.
Eastland	Eastland	1,420	6	43.6	.....	76	1	4	8	49	0.50	.....	0.50	0	1	12	2	17	s.	James A. Beard.
Edna	Jackson	71	4	.....	.....	.....	.....	.....	.....	.....	1.83	.....	0.89	0	5	.....	.....	.....	.....	E. L. Faires.
El Paso	El Paso	3,762	34	40.3	− 3.8	70	4	2	8	43	0.49	− 0.02	0.26	2.1	4	19	8	4	nw.	U. S. Weather Bureau.
Encinal	La Salle	558	5	51.3	.....	71	30	26	7	29	1.15	.....	.....	0	5	14	1	16	n.	Walter Pettit.
Falfurrias	Brooks	.....	5	56.4	.....	87	5	27	7	51	1.01	.....	0.57	0	4	12	5	14	ne.	W. A. Gardner.
Flatonia	Fayette	465	5	53.2	.....	79	20	19	8	42	1.08	.....	0.30	0	6	12	7	12	n.	Fred W. Laux.
Flint	Smith	483	3	48.7	.....	72	5	13	8	42	4.29	.....	1.36	T.	9	11	5	15	nw.	F. C. C. Carter.
Fort Clark	Kinney	1,050	42	48.6	− 2.0	74	17†	20	7	38	0.40	− 0.41	0.40	0	1	.....	.....	.....	se.	Post Hospital.
Fort Davis	Jeff Davis	5,000	34	.....	.....	.....	.....	.....	.....	.....	T.	− 0.54	T.	T.	0	.....	.....	.....	.....	C. H. Bird.
Fort McIntosh	Webb	460	45	58.6	+ 3.6	87	6	23	3†	57	0.47	− 0.33	0.35	0	3	15	3	13	nw.	Post Hospital.
Fort Stockton	Pecos	3,050	16	48.8	+ 3.5	80	19	10	7†	45	T.	− 0.38	T.	T.	0	14	16	1	n.	H. H. Butz.
Fort Worth	Tarrant	670	18	46.1	+ 1.8	78	1	13	7	38	2.30	+ 1.37	1.34	0.7	6	12	2	17	nw.	U. S. Weather Bureau.
Fredericksburg	Gillespie	1,742	24	48.6	− 0.5	72	4	13	7	37	1.86	+ 0.55	1.18	1.0	6	11	7	13	n.	Arthur Striegler.
Gail	Borden	.....	1	44.9	.....	77	20	7	8	40	T.	.....	T.	T.	0	27	2	2	s.	J. D. Brown.
Gainesville	Cooke	738	23	42.9	− 0.6	72	17	6	8	49	1.89	+ 0.32	0.92	0	4	.....	.....	.....	.....	J. L. Hickson.
Galveston	Galveston	69	42	54.6	+ 1.9	70	20	27	8	22	2.92	− 0.70	2.24	0	9	13	6	12	n.	U. S. Weather Bureau.
Garden City	Glasscock	.....	1	.....	.....	.....	.....	.....	.....	.....	0.12	.....	0.10	T.	2	20	4	7	sw.	C. W. Cunningham.
Gatesville	Coryell	795	9	48.0	.....	75	4	10	8	42	2.65	.....	0.75	0	6	14	12	5	.....	John Ryan.
Georgetown	Williamson	750	18	47.5	− 1.9	75	3	15	9	44	1.72	+ 0.12	0.83	0	10	17	2	12	n.	Prof. R. F. Young.
Goliad	Goliad	164	1	.....	.....	.....	.....	.....	.....	.....	0.51	.....	0.22	0	5	.....	.....	.....	.....	W. B. Campbell.
Gonzales	Gonzales	299	8	.....	.....	.....	.....	.....	.....	.....	1.04	.....	0.28	0	9	10	4	17	n.	J. M. Johnson.
Goree	Knox	.....	1	.....	.....	.....	.....	.....	.....	.....	0.18	.....	0.08	T.	3	16	10	5	sw.	R. L. Gaines.
Gorham	McLennan	444	4	.....	.....	.....	.....	12	8	.....	1.85	.....	0.75	0	3	14	8	9	n.	John Gorham.
Graham	Young	1,040	14	45.9	+ 2.5	80	18	0	8	48	1.65	+ 0.84	0.70	2.0	4	13	7	11	n.	C. W. Johnson.
Grand Falls	Ward	.....	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	13	14	4	.....	W. A. White.
Grand Saline	Van Zandt	399	3	.....	.....	.....	.....	.....	.....	.....	3.62	.....	1.39	T.	6	14	5	12	s.	Jas. Kirk.
Grapevine	Tarrant	670	23	46.1[d]	+ 0.1	75	1	9	8	38[d]	2.83	+ 0.91	1.38	0.8	6	7[c]	8[c]	13[c]	n.	W. J. Crowley.
Greenville	Hunt	550	13	45.4	− 0.4	72	4	10	8	40	3.55	+ 2.02	2.00	T.	3	14	0	17	n.	Mrs. L. A. Regan.
Hallettsville	Lavaca	235	21	54.4	+ 1.7	78	20	23	7	33	0.88	− 1.03	0.40	T.	4	12	5	14	n.	Dr. J. E. Lay.
Hamlin	Jones	1,685	2	.....	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0	1	.....	.....	.....	.....	W. S. Carruthers.
Harlingen	Cameron	37	2	57.6	.....	81	20	30	8	39	1.53	.....	0.74	0	5	16	5	10	se.	Lindsay Waters.
Harper	Gillespie	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Christian Fritz.
Haskell	Haskell	1,553	18	43.2	− 0.8	76	17	6	8	37	0.32	− 0.33	0.12	1.0	4	15	7	9	n	P. D. Sanders.
Hebbronville	Duval	.....	6	.....	.....	.....	.....	.....	.....	.....	0.67	.....	0.38	0	4	.....	.....	.....	.....	Henry Edds.
Hempstead	Waller	254	9	.....	.....	.....	.....	.....	.....	.....	1.80	.....	0.70	0	7	13	0	18	n.	J. H. Hancock.
Henderson	Rusk	500	4	.....	.....	.....	.....	.....	.....	.....	3.13	.....	1.10	0	6	9	7	15	.....	M. Kangerga.

TABLE 1.—*Climatological data for January, 1913. District No. 8*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Texas—Continued.																				
Hewitt	McLennan	664	18	.....	.....	.....	.....	.....	.....	.....	2.10	+ 0.46	0.72	T.	5	.....	.....	.....	.....	I. H. Earle.
Hico	Hamilton	.....	2	.....	.....	.....	.....	.....	.....	.....	1.59	.....	0.65	0	5	13	0	18	n.	John A. Eakins.
Hillsboro	Hill	628	9	48.9	.....	75	24	10	8†	47	3.14	.....	1.32	0	4	.....	.....	.....	.....	W. G. Escott.
Hondo	Medina	901	14	50.2	.....	73	30	20	7†	40	0.63	− 0.62	0.25	0	3	13	3	15	se.	H. E. Haass.
Houston	Harris	138	23	54.8	+ 1.9	79	20	24	7	36	3.34	− 0.17	1.73	T.	10	9	5	17	nw.	U. S. Weather Bureau.
Huntsville	Walker	400	29	52.4	+ 3.0	75	20	19	8	34	1.90	− 1.97	1.30	0	2	29	0	2	n.	W. Y. Barr.
Jayton	Kent	.....	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	17	0	14	w.	Wichita Valley Ry. Co.
Jewett	Leon	496	9	46.8	.....	75	5	14	8†	41	3.33	.....	1.08	0	5	16	9	6	n.	Earle Adkisson.
Junction	Kimble	1,645	12	47.0	.....	76	18	8	7†	48	0.76	+ 0.01	0.40	0	3	.....	.....	.....	.....	Judge John S. Durst.
Kaufman	Kaufman	448	14	46.4	− 0.9	71	19	11	8	35	2.87	+ 1.43	1.34	0	4	13	5	13	n.	B. J. Hubbard.
Kerrville	Kerr	1,650	17	48.4	− 0.9	80	23	10	8	51	1.40	− 0.78	0.58	0	6	12	5	14	n.	Robert E. Horne.
Knickerbocker	Tom Green	2,050	9	46.2	.....	79	4	9	8	42	0.73	.....	0.51	0.4	3	19	5	7	s.	Jos. Tweedy.
Kopperl	Bosque	576	16	.....	.....	.....	.....	.....	.....	.....	2.09	+ 0.94	0.82	0	5	11	6	14	n.	T. A. Johnson.
Lagrange	Fayette	276	3	.....	.....	.....	.....	.....	.....	.....	1.32	.....	0.36	0	8	12	1	18	nw.	August Hermes.
Lamesa	Dawson	2,500	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	S. D. Austin.
Lampasas	Lampasas	1,026	21	47.6	− 0.3	79	2†	10	8	47	2.09	+ 0.66	1.04	T.	7	14	1	16	n.	Mrs. K. I. Webber.
La Parra	Willacy	38	13	.....	.....	.....	.....	.....	.....	.....	1.19	+ 0.24	0.56	0	5	.....	.....	.....	.....	Jno. G. Kenedy.
Laredo	Webb	421	.....	.....	.....	.....	.....	.....	.....	.....	0.55	.....	0.40	0	7	.....	.....	.....	.....	Mrs. A. H. Jackson.
Laureles Ranch	Nueces	20	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Matt Cody.
Liberty	Liberty	38	9	55.4	.....	78	20	22	7	39	5.67	.....	3.10	T.	7	10	8	13	n.	Mrs. Fannie Sneed.
Llano	Llano	1,040	22	46.2	− 4.2	77	4	14	8	47	1.42	+ 0.70	0.68	T.	7	13	8	10	ne.	E. W. Torrence.
Llano Grande	Hidalgo	86	5	57.2	.....	86	4	28	7	43	1.30	.....	1.20	0	2	11	11	9	se.	M. D. Wardlow.
Long Lake	Anderson	229	8	.....	.....	.....	.....	.....	.....	.....	2.98	.....	1.00	0	7	11	4	16	s.	Geo. W. Ellis.
Longview	Gregg	336	27	48.6	+ 1.2	72	19†	15	8	40	2.83	− 1.35	0.68	0	8	13	1	17	nw.	C. A. Propst.
Lubbock	Lubbock	.....	2	.....	.....	.....	.....	.....	.....	.....	0.04	.....	0.04	T.	1	20	7	4	sw.	A. L. Paschall.
Lufkin	Angelina	325	6	50.3	.....	77	30	17	8	41	3.47	.....	1.40	0	10	13	4	14	s.	T. A. King.
Luling	Caldwell	418	24	52.0	+ 0.8	77	20	21	7	37	0.98	− 0.80	0.24	0	8	11	4	16	n.	John Carter.
McGregor	McLennan	713	3	.....	.....	.....	.....	.....	.....	.....	3.15	.....	1.50	0	4	19	2	10	s.	W. H. Whitley..
McKinney	Collin	612	11	44.8	.....	73	4	8	8	41	3.31	+ 0.83	1.60	0	10	14	2	15	nw.	H. Killingworth.
Marathon	Brewster	4,043	3	44.2	.....	69	15	1	7	46	T.	.....	T.	T.	0	13	7	11	s.	Rev. A. P. Willis.
Marble Falls	Burnet	771	5	.....	.....	.....	.....	.....	.....	.....	2.18	.....	1.70	T.	8	13	0	18	n.	B. E. Cochran.
Marfa	Presidio	.....	5	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	W. L. Jones.
Marshall	Harrison	375	11	50.0	.....	74	19	14	8	41	3.51	− 0.97	0.88	0	11	5[a]	10[a]	15[a]	s.	Lee Scott.
Matagorda	Matagorda	12	3	.....	.....	.....	.....	.....	.....	.....	3.05	.....	2.14	0	10	15	0	16	s.	W. E. McNabb.
Mexia	Limestone	537	9	45.1	.....	70	16†	14	9	38	2.52	.....	0.95	T.	9	8	9	14	s.	Miss Josephine Newman.
Midland	Midland	.....	6	45.6	.....	78	17	8	8	46	T.	.....	T.	0	0	17	8	6	sw.	J. Harvey Clark.
Mission	Hidalgo	140	3	58.6	.....	86	2†	31	8	42	1.15	.....	1.15	0	1	4	12	15	n.	Myron J. Conway.
Mont Belvieu	Chambers	65	3	.....	.....	.....	.....	.....	.....	.....	6.65	.....	3.31	0	9	8	5	18	s.	A. R. Shearer.
Montell	Uvalde	.....	1	.....	.....	.....	.....	.....	.....	.....	0.39	.....	0.15	0	7	12	6	13	s.	A. G. Beecroft.
Mount Blanco	Crosby	2,750	24	38.9	− 1.5	74	4	0	8	50	0.05	− 0.58	0.05	0	1	18	6	7	s.	Geo. W. Smith.
Nacogdoches	Nacogdoches	271	14	48.5	+ 0.9	74	20	16	8	41	4.04	+ 1.20	1.58	0	6	11	3	17	n.	Miss Mary Hofmann.
New Braunfels	Comal	720	24	50.4	− 1.6	73	5†	20	7	34	1.05	− 0.63	0.28	0	6	12	6	13	n.	J. Giesecke.
Palestine	Anderson	510	31	48.2	+ 1.7	71	19	15	8	33	3.45	− 0.42	1.24	T.	8	12	8	11	s.	U. S. Weather Bureau.
Panter	Hood	1,000	24	.....	.....	.....	.....	.....	.....	.....	1.98	+ 0.30	0.95	1.2	5	.....	.....	.....	.....	E. H. Snyder.
Pearsall	Frio	629	3	.....	.....	.....	.....	.....	.....	.....	0.53	.....	0.19	0	6	.....	.....	.....	.....	Earnest De Vilbiss.
Pierce	Wharton	102	7	52.8	.....	77	20	18	7	37	1.53	.....	0.64	0	5	12	0	19	n.	R. B. Pointer.
Plainview	Hale	3,374	17	38.6	− 3.6	70	3	− 1	8	46	0.16	− 0.28	0.16	T.	1	17	9	5	sw.	J. F. Sander.
Port Lavaca	Calhoun	20	12	52.8	− 2.9	73	5	24	7	34	0.83	− 0.44	0.83	0	1	12	10	9	n.	J. H. Bickford.
Post	Garza	2,700	3	.....	.....	.....	.....	.....	.....	.....	0.03	.....	0.03	0	1	12	9	10	n.	W. T. Mann.
Putnam	Callahan	1,591	2	.....	.....	.....	.....	.....	.....	.....	0.60	.....	0.30	0.5	3	24	1	6	se.	S. M. Davis.
Raymondville	Cameron	.....	2	57.4	.....	86	2	31	8	54	1.98	.....	1.03	0	12	9	9	13	nw.	C. H. Pease.
Ricardo	Nueces	57	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. L. Shaffer.
Rio Grande	Starr	.....	36	.....	.....	.....	.....	.....	.....	.....	1.20	+ 0.39	0.70	0	4	20	1	10	se.	D. N. Garza.
Riverside	Walker	169	9	.....	.....	.....	.....	.....	.....	.....	2.75	.....	1.20	0	6	13	2	16	n.	Mrs. C. W. Higdon.
Rockland	Tyler	136	9	.....	.....	.....	.....	.....	.....	.....	2.60	.....	1.90	0	4	13	7	11	n.	Mack Dunkin.
Rockport **	Aransas	12	12	53.3	− 0.4	70	5	24	7	26	1.33	− 0.60	0.80	0	5	15	5	11	e.	Mrs. G. Grewe.
Rossville	Atascosa	558	6	53.1	.....	77	15†	21	7	41	0.61	.....	0.17	0	6	11	9	11	se.	W. F. M. Ross.
Runge	Karnes	308	18	.....	.....	.....	.....	.....	.....	.....	0.86	− 0.27	0.86	0	1	.....	.....	.....	.....	Reiffert & Frobese.
Sabinal	Uvalde	964	9	53.0[a]	.....	76	18	21	8	41	0.59	.....	0.20	0	3	10[a]	5[a]	11[a]	se.	H. W. Reily.
Salado	Bell	.....	3	.....	.....	.....	.....	.....	.....	.....	2.09	.....	0.68	0	5	14	1	16	s.	L. M. Crockett.
San Angelo	Tom Green	1,847	22	46.3	+ 2.3	73	17	11	7	47	0.44	− 0.26	0.44	T.	1	18[a]	8[a]	2[a]	n.	Sam Crowther.
San Antonio	Bexar	701	28	52.4	+ 1.3	77	5	30	7	33	0.90	− 0.78	0.50	0	8	9	9	13	s.	U. S. Weather Bureau.
San Augustine	San Augustine	360	4	52.5	.....	78	18	17	8	42	4.72	.....	1.98	T.	11	11	6	14	.....	F. A. Wilson.
San Juanito	Hidalgo	.....	4	59.0	.....	85	5	29	8	43	1.69	.....	0.56	0	11	5	3	23	nw.	J. B. McAllen.
San Marcos	Hays	588	20	50.0	− 1.1	75	19†	20	7†	38	0.47	− 0.96	0.47	0	1	15	0	16	n.	Miss L. C. Ford.
San Saba	San Saba	1,712	12	46.7	− 2.3	77	4	6	8	44	1.14	+ 0.55	0.40	0	6	13	8	10	n.	Jas. Burns.
Santa Gertrudes	Nueces	.....	13	.....	.....	.....	.....	.....	.....	.....	2.05	+ 1.35	2.05	0	1	.....	.....	.....	.....	J. B. Wright, jr.
Sealy	Austin	201	2	.....	.....	.....	.....	.....	.....	.....	1.23	.....	0.62	0	8	10	3	18	n.	O. H. Albert.
Seymour	Baylor	1,320	7	42.2	.....	77	17	5	8	40	0.44	.....	0.21	T.	4	.....	.....	.....	n.	S. C. Lee.
Snyder	Scurry	.....	2	40.8	.....	76	4	3	8	42	0.25	.....	0.12	0	3	17	8	6	n.	J. Allen Weaver.
Somerville	Burleson	251	4	53.2	.....	80	18	19	7	41	2.70	.....	1.55	0	4	18	2	11	n.	Ed. Herbst.
Sonora	Sutton	2,200	9	45.8	.....	75	4†	9	8	53	0.78	.....	0.56	T.	4	16	3	12	s.	C. R. Myers
Spur	Dickens	2,300	2	39.4	.....	73	1	1	8	42	0.04	.....	0.03	T.	2	18	6	7	n.	J. D. Reagan.
Stamford	Jones	.....	2	40.0	.....	68	17†	6	7†	34	0.17	.....	0.10	0	2	14	12	5	.....	H. Pratt.
Stowell	Chambers	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Arthur Bailey.
Sugarland	Fort Bend	79	12	52.3	− 1.6	78	20	23	8	40	2.29	.....	1.02	0	5	10[a]	6[a]	14[a]	n.	Paul C. Rudat.
Sutherland Springs	Wilson	424	3	.....	.....	.....	.....	.....	.....	.....	0.40	.....	0.40	0	1	.....	.....	.....	.....	L. V. Bigham.
Taylor	Williamson	583	12	48.6	+ 1.1	75	3	16	8	43	1.62	− 1.20	1.10	T.	6	10	6	15	s.	U. S. Weather Bureau.
Temple	Bell	630	23	47.6	+ 0.7	70	16†	15	8	35	2.09	− 0.01	1.13	0	7	15	11	5	.....	W. Goodrich Jones.
Theodore	Winkler	.....	3	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	W. B. Oates.
Thurber	Erath	.....	3	.....	.....	.....	.....	.....	.....	.....	0.89	.....	0.37	0	3	.....	.....	.....	.....	J. K. Ball.
Tivoli	Refugio	.....	3	.....	.....	.....	.....	.....	.....	.....	1.18	.....	0.80	0	4	.....	.....	.....	.....	W. H. Gisler.
Uvalde	Uvalde	937	17	.....	.....	.....	.....	18	8	.....	0.35	− 0.43	0.20	0	3	.....	.....	.....	.....	J. G. McBride.
Valentine	Jeff Davis	4,421	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Valentine Development Co.
Valley Junction	Robertson	289	13	.....	.....	.....	.....	.....	.....	.....	2.65	+ 1.47	1.35	0	5	20	0	11	s.	Frank Fitzpatrick.
Victoria	Victoria	187	14	55.4	− 0.9	86	4†	24	7	40	0.55	− 1.95	0.55	0	1	10	1	20	n.	C. C. Zirjacks.
Waco	McLennan	424	24	50.8	+ 2.4	80	4	13	10	41	1.78	− 0.48	0.80	0	5	12	0	19	s.	E. H. Hall.
Waxahachie	Ellis	556	16	44.6	− 1.2	75	4	9	8	42	2.52	+ 0.96	1.10	0	5	10	6	15	n.	C. D. Longserre.
Weatherford	Parker	864	24	42.5	− 2.0	72	1†	9	8	36	1.78	+ 0.29	0.60	0.8	7	15	2	14	s.	Miss J. Stickfort.
Wills Point	Van Zandt	524	8	45.3	.....	77	20	11	8	43	1.49	.....	0.86	T.	3	15	3	13	n.	W. W. Gibbard.
Winters	Runnels	.....	2	.....	.....	.....	.....	.....	.....	.....	0.95	.....	0.45	0	3	.....	.....	.....	.....	Ed. P. Eason.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 8, Texas and Rio Grande Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Colorado.																															
Blanca	Rio Grande				T.	.03	T.																								0.03
Cumbres	do	.03				.66	.03			.29	T.						.42	.24		T.											1.67
Garnett	do	.01					.53																								0.54
Hermit	do	.08	T.		T.	.12	T.				.10	.04				T.	.06	.17													0.57
La Veta Pass	do	.28				1.20				T.																					1.48
Manassa	do					.17																									0.17
Platoro	do	.04			T.	.58	.07				.60	.12				.09	.20	.36	T.	.01	T.											2.07
Saguache	do					.30					T.						T.														0.30
San Luis	do	.13				.65	.05				.01																				0.84
Wagon Wheel Gap Experiment Sta.	do	.03			.05	.29	.02			.03	.25						.06	T.												T.	0.73
New Mexico.																															
Agricultural College	Rio Grande						.30					T.					T.					T.	.19								0.49
Alamogordo (near)	do						*	.52				T.											.05								0.57
Alamogordo	do						.39																.10								0.49
Alamos Ranch	do					1.53																	.21								1.74
Albuquerque	do				*	.21	.01																.56								0.78
Ancho	do					*	.49				.35																				0.84
Anchor Mine	do	.10						.54	.12							*	.54	.42													1.72
Artesia	Pecos						*	.09																							0.09
Aspen Grove Ranch	Rio Grande	.01				.41	.14				.12						.46	.13		T.			.01								1.28
Batemans Ranch	do					.64	.10				T.	.30					.30	.10					T.	.13							1.57
Berino	do																														
Bluewater	do					T.																	.12								0.12
Boaz	Pecos						.20	.06																							0.26
Capitan	do					.28	.96					.42																			1.66
Carlsbad	do					*	.18					T.																			0.18
Carrizozo	Rio Grande																														
Cerrillos (near)	do					.80	.15	T.				.02										.25									1.22
Chama	do						.98				.14	.12					T.	.21						.12							1.57
Cloudcroft	Pecos					*	.77					.21											.15								1.13
Corona	do				*	.84	.96																					T.	T.			1.80
Coyote	Rio Grande																														
Cundiyo	do					.27	.06																.21								0.54
Demonstat'n Farm	Pecos					.23	.06																								0.29
Duran	do					.38	.36																								0.74
Escondido	Rio Grande						.28	.18													.04										0.50
Espanola	do					.14	.12	T.															.07	.04							0.37
Estancia	do					*	.98																.07								1.06
Fort Stanton	Pecos					*	1.00					.04																			1.04
Fort Sumner	do					*	.16															T.									0.16
Gallinas	do					.40	.38																								0.78
Gallinas Plant. Sta.	do	T.				.42	.18											T.			.08		.09	.02							0.79
Glorieta Ranch	do						.40																.31								0.71
Harvey's Up. R'nch.	do	T.				.35	.09				T.							.07			.03		.03	.03							0.60
Hobbs	do						*	.03		T.	T.						T.														0.03
Hondo Reservoir	do					T.	*	.44																							0.44
Jemez Spring	Rio Grande					.50	.05				T.	.05						T.					.15	.05							0.80
Knowles (near)	Pecos							.03			T.						T.				T.		T.								0.03
Laguna	Rio Grande						.28																.32								0.60
Lagunita	Pecos																														
Lake Valley	Rio Grande					.05	.24					.02										*	.42								0.73
Lakewood (near)	Pecos						.01																								0.01
Lanark	Rio Grande				*	.14	.08															*	.16								0.38
Las Vegas	Pecos					.33	.10														T.		.05								0.48
Liston	do						.30																								0.30
Los Lunas (near)	Rio Grande						.22																.51								0.73
Magdalena	do						.28															T.	.28								0.56
Mascalero	do					T.	.41	.03				.10											.10								0.64
Mineral Hill	Pecos	T.				*	.36														.03		T.								0.39
Monterey	Rio Grande					*	.33	T.																							0.33
Mountainair	do					.48	.52																.15								1.15
Mountain Park	do						.80					.16				.03							.14								1.13
Newman	do																														
Noria	do						.18									T.															0.18
Orogrande	do						.39									T.							T.								0.39
Oscura	do						.46																.04								0.50
Otis	Pecos						.05	.12			T.											T.									0.17
Otto	Rio Grande					.80	.21	.12																.16							1.29
Pastura	Pecos					*	.42																								0.42
Placitas (near)	Rio Grande					1.95	.20					.18									T.		.52								2.85
Plainview (near)	Pecos						T.	.13			T.						T.						T.								0.13
Red River Canyon	Rio Grande			*	.80	.20				T.		T.					.30	.20											20		1.70
Rincon	do					T.	.35															.25									0.60
Rio Grande Dam	do					T.	.47															*	.30								0.77
Rio Grande Industrial School.	do					.20																	.75								0.95
Rosedale	do					*	.30					T.											.30		T.						0.60
Roswell	Pecos					.12	.48																T.								0.60
San Marcial	Rio Grande						.15																.30								0.45
San Rafael	do					.03	.05	.01			T.												.14								0.23
Santa Fe	do					.16	.04	.01			.06							T.			T.		.30								0.57
Santa Fe Canyon	do					.17	.19					.05						T.			T.		.35								0.76
Santa Rosa	Pecos					.07	.30														T.		T.								0.40
Senorito (near)	Rio Grande				*	.46	T.				.03							T.					.18	.07							0.74
Socorro	do					*	.20																23								0.43
Stanley	do					*	.62				T.												17		*						0.79
Tajique (near)	do					.35	.23				T.	.39									.06		.32								1.35
Taos	do					.20	.02					.02							.02				.05								0.31
Taos Canyon	do	T.			.22	.07	T.				.22	T.					.09	T.					.04	T.							0.64
Tecolote	do					.63	.36			.16													.08								1.23
Three Rivers	do					.57																	.08								0.65
Tijeras Canyon	do					.50	.08					.10											.35								1.03
Torrance	Pecos				.32	.68	.20																								1.20
Tres Piedras	Rio Grande	T.			*	.85												T.					T.								0.85
Truchas	do					.29	.13					.04						.05					.14								0.65
Tularosa	do						.32					T.											.02								0.34
Vaughn	Pecos				.08	.28	.18																								0.54
Virsylvia	Rio Grande	.11	.05		.22	.06																									0.44
Willard	do					.40	.58					T.											.04								1.02
Winsors	Pecos		T.			.30	.15				*	.15					T.	.20			T.	T.	.20	T.							1.00

TABLE 2.—*Daily precipitation for January, 1913. District No. 8*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas.																																	
Abilene	Brazos						.03			T.	.08						.01						.11				.02						0.25
Albany	do										.20	.09			T.								.21						T.				0.50
Alice	Coast														.45	.05						.30		.05			.25						1.10
Alpine	Pecos																																0.00
Alvin	Coast						T.			T.	T.	T.				T.	1.20	.40	.30			1.76	.82				2.40	T.					6.88
Anahuac	do						.05	.07			.05	.10						.43	.09				.34	.08			1.98	.34					3.53
Antelope	Trinity						.03			.08	.97	T.			T.											T.	.41						1.49
Aspermont	Brazos																						.13										0.13
Austin	Colorado							T.		.03	.27				.03			T.					.17			.06	.70						1.26
Ballinger	do							.10				.20											.05	T.				.66					1.01
Barstow	Pecos																																0.00
Bay City	Colorado										.15							.09	.03	.02		T.	.05	T.			.13	1.24					1.71
Beaumont	Neches					T.		.28	.02	T.	T.	T.	.25					.18	1.22	.23		.08		.78	.44			3.16					6.64
Beeville	Coast							T.	T.		.03	.03			.05	.02	T.				T.	T.	.10	.05	T.	.02	.23	.05					0.58
Big Springs	Colorado						T.	T.			.10						T.						.19										0.29
Blanco	Guadalupe							.03				.16					.12				T.			.16				.98					1.45
Boerne	San Antonio							.01		.02	.07				.17	.05	.02	T.		.02	.17	.04				.12	.52						1.21
Booth	Brazos							.35			.10	.10	.17						.08					.18			.35	.90					2.23
Bowie	Trinity						.05				.94	.07					T.						.42										1.48
Brady	Colorado						.50				.20																.75						1.45
Brazoria	Brazos					.02	.05	.01	T.	.01	.03	.07						.53	.02	.01			.27	T.			1.90	.02			T.		2.94
Brazos	do							.10			.01	.52											T.	.42				T.					1.05
Brenham	do							.05	T.		T.	.42	.02				.05	.04	T.		.02		.02	.28	.01		.40	.61					1.92
Bridgeport	Trinity										.15	.90	.10											.40									1.55
Brighton	Coast										.31												.07		T.	1.55							1.93
Brownsville	Rio Grande						.02	.01	.01	.03	.06			.24	.36	.02	T.	T.	T.	.02	T.	.05	.01	T.	T.	.02	1.16	.04					2.05
Brownwood	Colorado							.03			.10	.40				T.	T.	T.					T.	.33				.60					1.46
Buena Vista	Pecos																																0.00
Cameron	Brazos																																
Carmona	Neches					T.	.05	.39		.05	.06	.93						T.	T.	.10	.02		.21	.05	T.	.50		.80				.13	3.29
Carrizo Springs	Nueces																																
Claytonville	Brazos										.08						.03						.04										0.15
Clifton	do						T.	.05			.78	.03				T.	T.	.04		.05	.06		.58				.59	.18					2.36
Coleman	Colorado						.04	T.			.50				T.					T.	T.		.12				.69						1.35
Collegeport	Coast																																
College Station	Brazos						T.	.07			.16	.54	.01				T.	.01	.01	T.	.02	.03	.50	.07	T.		.61	.95					2.98
Colorado	Colorado						.25			.42													.10				.24						0.77
Columbus	do							T.			T.	.38	.02			T.	.02	T.	.16		T.		.12	.25	.02		.28	.48					1.73
Corpus Christi	Coast						.01	.02	T.	T.	.03	.02	T.		.03	T.	.02	.01	T.	T.	T.	.15	.03	.02	.01	T.	.57						0.92
Corsicana	Trinity							T.			.06	.79	T.						.20	T.	T.	.01	T.	.62			.05	.57					2.30
Cotulla	Nueces																									.10	.20						0.30
Crockett	Trinity						T.				.22	.76						.79			.41		.33	T.	T.		.52	.37					3.40
Cuero	Guadalupe							.05			.26					.12	.08						.12				.48	.05					1.16
Dallas	Trinity						T.	T.	.10		.06	1.89						T.	.05					1.12				.15					3.37
Danevang	Coast										.30																1.10						1.40
Del Rio	Rio Grande																																
Devine	Nueces										.40				T.	.10					T.	T.	.27				.25						1.02
Dialville	Neches							.06		T.	.67	.25			T.	T.	T.	.12		T.	.22		.65	T.			1.15						3.12
Dilley	Nueces																									.30							0.30
Dublin	Brazos							.10	.01		.03	.34				T.					T.		.66	.27			T.	.71					2.12
Duval	Colorado							T.			.30				T.			.06			.10		.27		T.		1.32					2.05
Eagle Pass	Rio Grande																						.10				.24						0.34
Eastland	Brazos											.50											T.										0.50
Edna	Lavaca					.54			.10			.20										.10				.89							1.83
El Paso	Rio Grande						.24	.02				T.				T.	.22					T.	.01										0.49
Encinal	Nueces														*	.50										.15	.40	.10					1.15
Falfurrias	Coast							.10	T.						.57	T.						T.	T.	.11	T.		.23						1.01
Flatonia	Guadalupe						T.	T.			.23	.12					.03	T.			.01		.39	T.			.30						1.08
Flint	Neches						T.	.03			1.36	.97			T.			.31			.33		.55	.08			*	.66					4.29
Fort Clark	Rio Grande						T.				T.				T.	T.					T.		.40				T.						0.40
Fort Davis	Pecos						T.																										T.
Fort McIntosh	Rio Grande																.02									.10	.35						0.47
Fort Stockton	Pecos						T.																										T.
Fort Worth	Trinity					T.	T.	.07		.03	.76				T.	.02	T.	T.			T.	T.	1.34	T.	T.		.08						2.30
Fredericksburg	Colorado							.10	.03		.08					T.		.33	T.	T.			.14				1.18	T.					1.86
Gail	do							T.																									T.
Gainesville	Trinity										.80					.07		.10					.92										1.89
Galveston	Coast		T.			T.	T.	.04	T.	.08	T.	.03						.22	.04	.02	T.		.18	.07	T.		2.24				T.		2.92
Garden City	Colorado						.02	T.		.10													T.										0.12
Gatesville	Brazos										.60					.05		.30				.60					.75	.35					2.65
Georgetown	do										.04	.26				T.	.01		.25			.03	.01	.14	.04		.11	.83					1.72
Goliad	San Antonio								.05		.06											.07	.11				.22						0.51
Gonzales	Guadalupe										.04	.28	.05				T.	.03					.20	.13			.13	.18					1.04
Goree	Brazos						T.				.08	T.					.02						.08										0.18
Gorham	do										.50						T.	.60			T.						.75						1.85
Graham	do						T.	.50	T.		.70	.05		T.									.40										1.65
Grand Falls	Pecos																																0.00
Grand Saline	Sabine						T.	T.			1.39	.34						.63		T.			.75	.05			.46						3.62
Grapevine	Trinity							.08			1.13					.11	.12				T.		1.38				.01						2.83
Greenville	Sabine							T.				2.00										35		1.20				T.					3.55
Hallettsville	Lavaca							T.			.10	.05			T.	T.	T.	T.	T.	T.		T.	.33	T.			.40						0.88
Hamlin	Brazos									.05																							0.05
Harlingen	Coast														.74	.05	T.	T.	T.	.02		.05					.67						1.53
Harper	Colorado																																0.00
Haskell	Brazos						.10				.12						.05						.05										0.32
Hebronville	Coast														.38							.06	.02				.21						0.67
Hempstead	Brazos						T.	T.	T.		T.	.10					T.	T.	.10	T.	T.		.10	.10	.20	.50		.70					1.80
Henderson	Neches										.56	.32						.20			.32		.63				1.10						3.13
Hewitt	Brazos						T.	T.			.29					T.	T.	.21					.40				.72	.48					2.10
Hico	do						T.				.40					T.	.03				T.		.50		.01		.65						1.59
Hillsboro	do											.98									.06			.78				1.32					3.14
Hondo	Nueces																.20						.25				.18						0.63
Houston	Coast		T.			T.	.04	.85	T.	.01	.05	.18					T.	.14	T.	.01	T.		.32	T.	T.		1.73				.01		3.34
Huntsville	Trinity																							.60	T.			1.30					1.90
Jayton	Brazos																																0.00
Jewett	Trinity										T.	1.08		.15								.10		1.00	T.			1.00	T.				3.33
Junction	Colorado																						.28		.08		.40						0.76
Kaufman	Trinity										1.34	.11			T.	T.	T.	T.		T.	T.		.94				.48						2.87
Kerrville	Guadalupe										.20							.15	.05					.17			.25	.58					1.40
Killeen	Brazos																																0.00
Knickerbocker	Colorado						T.	.09		T.	T.						T.		T.				T.		T.		.51	.13					0.73

TABLE 2.—*Daily precipitation for January, 1913. District No. 8*—Continued.

Stations.	Watershed.	Day of month.																											Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Texas—Contd.																																	
Kopperl‖	Brazos								.06			.64				T.	T.						.05	.82				.52					2.09
Lagrange	Colorado						T.			T.	.19	.17					.08	T.		.02	.04		.35				.36	.11					1.32
Lamesa	....do																																0.00
Lampasas‖	Brazos										.18					T.			.20		.08	.24	.10			.25	1.04						2.09
La Parra	Coast								.18						.10						.30	.05					.56						1.19
Laredo	Rio Grande															.04	.02	.02						.02		.01	.40	.04					0.55
Laureles Ranch	Coast																																0.00
Liberty‖	Trinity						T.	.22	T.		T.	.23	.23					.45	.75	T.		T.		.69	T.		T.	3.10					5.67
Llano	Colorado							T.				.13			T.	T.	T.	.10	.21				.15	.05			.10	.68					1.42
Llano Grande	Rio Grande																									1.20	.10						1.30
Long Lake‖	Trinity						T.	.08			.25	.68	.20									.20		.57			T.	1.00					2.98
Longview‖	Sabine							.10			.37	.62	.68						.04			.32		.60								.10	2.83
Lubbock	Brazos							T.			T.	T.				T.	.04	T.															0.04
Lufkin	Neches					.07	.14	.51					1.40	.09				.19		.06		.07				.51	.43						3.47
Luling‖	Guadalupe										.17	.15					.03	.02					.10	.13			.14	.24					0.98
McGregor	Brazos										1.00									.25			.40				1.50						3.15
McKinney	Trinity						T.	.04			1.60	.18			.03	T.	.05	.19		T.	.04		1.08	.04			.06						3.31
Marathon	Rio Grande						T.	T.														T.											T.
Marble Falls‖	Colorado						T.			T.	T.	.12	T.		T.	T.	.10	.03	.10	T.			.10	.03			.10	1.60					2.18
María	Rio Grande																																0.00
Marshall	Sabine					.02	.15				.22	.88						.13		T.	.30		.48	.20			.51	.31				.31	3.51
Matagorda	Coast					.02	.03	.01	.60	.04	.03	.05			.07	.06											2.14						3.05
Mexia‖	Brazos						T.	T.			.06	.47					.04	.02	.40			T.	.03	.54			.01	.95					2.52
Midland	Colorado									T.							T.																T.
Mission‖	Rio Grande								T.		T.				T.	T.						T.	T.				1.15						1.15
Mont Belvieu	Coast						T.	.11			.12	T.					.09	2.35	.04	.19			.21	.23			3.31						6.65
Montell	Nueces										.03					T.	.13	.01		.04			.15				.01	.02					0.39
Mount Blanco	Brazos																.05																0.05
Nacogdoches‖	Neches						.05				T.	.93	.60					T.	.36	T.	T.	T.	T.	.52	T.		T.	1.58					4.04
New Braunfels	Guadalupe							T.			.28					.08	.06					T.	.17			.20	.26					1.05
Palestine	Trinity					T.	T.	T.		T.	.87	.63			T.		T.	.23		.02	.22		.54				.93	.01					3.45
Panter	Brazos						.15		T.		.53						.02				T.	T.	.95			T.	.33						1.98
Pearsall	Nueces							T.		.18					.04						.02	.07	.03			.19	T.						0.53
Pierce	Colorado											.52												.17	.07		.64	.13					1.53
Plainview	Brazos							T.									.16																0.16
Port Lavaca	Coast						T.		T.	T.					T.		T.			T.	T.	T.	T.				.83						0.83
Post	Brazos										T.						T.	.03															0.03
Putnam	....do						.05				.25																.30						0.60
Raymondville‖	Coast					.05	.02	.02	.11				.54	.07			T.	.03		.05	.03	.02	.01		1.03								1.98
Ricardo	....do																																0.00
Rio Grande	Rio Grande						.10								.16	T.						.30					.70						1.20
Riverside‖	Trinity											.75	.20					.15		T.				.25				1.20				.20	2.75
Rockland‖	Neches						.10						.50							.10								1.90					2.60
Rockport	Coast						T.	T.	.16		T.	.10			T.								22	.05			.80						1.33
Rossville	Nueces										.13	T.			.02	.10				T.	T.		.17				.17	.02					0.61
Runge	San Antonio																									.86							0.86
Sabinal	Nueces															T.	.20	T.					19				.20						0.59
Salado	Brazos										.36							.42					.28				.68	.35					2.09
San Angelo	Colorado						T.				T.																.44						0.44
San Antonio	San Antonio							T.			.15	.01			T.	.11	T.	T.		.01	.02		.10	T.		.01	.49						0.90
San Augustine	Neches		T.			T.	T.	.38			.17	1.98					T.	.18	.09	.03	.04		.15		.32		1.18					.20	4.72
San Juanito	Coast						.06	.10			.20				.31	.09						.18	.05	.04		.03	.56	.07					1.69
San Marcos	Guadalupe																										.47						0.47
San Saba	Colorado							.02			.15				T.			.05					.25				.40	.27					1.14
Santa Gertrudes‖	Coast																			2.05													2.05
Sealy	Brazos						T.	.02			.05	.04						.17			.05		.16	T.			.62	.12					1.23
Seymour	....do							T.			.13	.05					.05						.21										0.44
Snyder‖	Colorado											.12				.03							.10										0.25
Somerville	Brazos						T.	T.			T.	.60											.55			.75	.80						2.70
Sonora	Rio Grande						T.				.09												.06	.07			.56						0.78
Spur‖	Brazos							T.			.01	T.						.03															0.04
Stamford	....do							T.		.10	.07													T.									0.17
Stowell	Coast																																0.00
Sugarland	Brazos						.19					T.						T.		T.			.60	.04		.44	1.02						2.29
Sutherland Springs	San Antonio							T.	T.																		.40						0.40
Taylor	Brazos						T.	T.			.21	T.			.01	T.	.01	.01		T.	T.		.28	T.			1.10						1.62
Temple‖	....do										T.	.04				T.	.05	.05				.35		.35			.12	1.13					2.09
Theodore	Pecos																																0.00
Thurber	Brazos										.31												.37				.21						0.89
Tivoli	Guadalupe			.10							.16									.12						.80							1.18
Uvalde	Nueces									.10																.20	.05						0.35
Valentine	Rio Grande																																0.00
Valley Junction‖	Brazos										.10	.40							.10					.70			1.35						2.65
Victoria‖	Guadalupe																									.55							0.55
Waco‖	Brazos										.35	T.						.14		.03			.46					.80					1.78
Waxahachie‖	Trinity						T.				.08	1.10					T.	T.						.95			.09	.30					2.52
Weatherford‖	....do						T.	.04	T.		.08	.57					.03				T.		.40	.60				.06					1.78
Wills Point	Sabine					T.	T.	T.							T.	T.	T.	.28	T.	T.			.86				.35						1.49
Winters	Colorado										.45												.13				.37						0.95

*Precipitation included in that of the next measurement.
‡Separate dates of falls not recorded.
‖Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913.—District No. 8, Texas and Rio Grande Valley.*

Date.	Colorado.				New Mexico.														Texas.							
	Garnett.		San Luis.		Agricultural College.		Carlsbad.		Fort Stanton.		Mountain-air.		Rosedale.		Roswell.		Santa Fe.		Santa Rosa.		Abilene.		Big Spring.		Browns-ville.		Corpus Christi.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	25	3	30	12	65	23	70	23	57	22	32	20	48	34	68	25	37	15	55	36	74	43	74	38	75	36	74	45
2	33	− 5	32	−13	47	22	72	24	52	15	38	22	50	18	57	20	34	5	56	17	47	35	65	37	65	52	61	46
3	40	− 5	42	0	59	20	71	20	59	33	34	18	58	22	68	23	43	20	60	36	69	41	62	29	72	34	70	34
4	41	12	39	15	68	19	76	46	54	35	44	7	50	34	74	25	49	24	63	24	74	36	78	35	72	48	71	47
5	26	− 2	33	− 2	48	30	67	25	50	10	13	3	45	20	26	14	27	7	25	11	37	21	60	21	76	62	74	63
6	7	−17	7	−14	30	8	34	10	10	− 3	5	− 7	22	5	14	4	7	−10	12	− 2	21	10	34	12	78	45	66	32
7	5	−31	12	−25	21	0	21	1	3	−20	10	−21	18	−10	14	− 7	7	−12	16	−10	26	9	26	9	46	30	33	27
8	10	−30	11	−31	23	− 8	31	− 3	40	−19	20	−19	33	− 4	14	−19	27	− 9	35	− 2	38	9	41	8	44	31	37	30
9	17	−26	31	−26	28	0	33	6	47	−13	35	−14	38	0	25	−10	37	4	32	− 7	46	21	50	20	50	34	45	34
10	26	−20	20	− 5	48	7	63	23	44	28	36	4	32	12	37	9	34	13	46	4	50	36	56	32	65	42	51	43
11	22	−19	15	− 2	45	25	58	28	36	22	32	8	38	15	45	20	24	9	37	21	55	27	54	26	77	54	70	50
12	20	−17	20	−12	46	12	58	16	42	8	32	4	42	5	42	12	27	5	39	20	46	17	51	15	67	48	59	38
13	26	−21	30	−12	51	22	60	21	56	17	35	8	42	20	51	20	41	14	51	21	60	30	62	22	61	46	56	44
14	34	−12	35	− 2	58	26	58	23	56	14	38	13	40	18	50	22	43	25	52	16	56	27	61	28	56	50	60	50
15	35	− 8	38	11	64	21	62	26	59	21	42	20	50	25	56	24	48	24	58	24	68	48	65	46	75	54	67	54
16	34	8	32	26	58	43	61	47	48	40	40	20	42	30	60	44	42	29	51	36	66	58	68	50	77	63	65	57
17	32	11	30	22	60	25	73	43	60	34	45	23	48	32	67	35	40	26	54	33	76	51	73	49	78	65	74	59
18	36	− 4	40	8	63	23	70	26	60	21	48	18	50	23	66	27	40	21	59	30	66	36	65	32	79	65	70	60
19	40	8	38	8	63	27	65	37	59	25	50	27	50	28	58	33	43	26	61	34	72	48	73	39	78	65	70	61
20	26	6	36	8	54	35	65	34	51	25	38	23	42	24	41	27	34	13	48	24	63	32	60	34	78	65	73	46
21	28	−14	30	−12	43	30	45	26	50	15	34	8	36	14	41	22	33	7	52	11	43	27	45	29	72	41	46	40
22	28	− 9	35	− 5	50	31	65	30	48	26	35	18	40	20	61	28	29	15	51	26	51	38	64	37	62	41	52	43
23	32	− 3	28	− 3	53	30	62	33	49	25	42	20	40	18	56	25	32	16	50	21	62	38	64	36	62	51	56	50
24	31	− 6	36	− 6	54	28	59	27	45	17	42	8	50	20	59	20	32	9	55	18	52	35	59	34	63	54	65	54
25	40	− 2	46	− 9	57	26	60	20	55	18	43	14	52	20	59	18	42	19	60	21	66	35	66	31	72	54	62	52
26	43	− 1	39	6	62	26	60	25	52	29	44	13	50	26	55	20	42	20	52	22	50	44	55	41	63	50	60	53
27	36	− 7	37	0	57	23	64	22	50	15	48	15	50	20	63	21	38	16	56	20	57	29	58	23	64	50	61	49
28	40	− 1	43	0	55	20	67	20	60	21	48	18	54	22	57	27	46	23	56	20	59	34	62	32	72	34	71	40
29	42	− 4	41	0	62	24	70	20	60	19	45	20	55	23	65	19	42	21	60	28	67	37	67	31	72	45	62	51
30	41	9	40	0	62	24	63	41	54	23	46	24	48	30	54	27	40	23	48	32	59	40	59	37	74	58	76	56
31	39	1	37	1	61	22	67	26	55	15	42	22	50	23	59	21	40	18	56	22	54	27	58	24	68	54	61	47
Mns.	30.2	−6.6	31.7	−2.0	52.1	21.4	59.6	24.7	49.1	17.4	36.6	11.5	44.0	18.9	50.4	19.2	35.5	14.1	48.6	19.6	55.8	32.7	59.2	30.2	68.2	49.1	61.9	46.9

Date.	Texas.																									
	Del Rio.		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Halletts-ville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	.....	.....	64	34	82	32	78	39	78	40	64	52	67	34	72	46	62	29	69	39	66	30	72	41	74	34	69	35
2	.....	.....	47	29	84	48	68	28	54	33	60	44	58	47	57	43	62	45	55	38	55	21	56	41	63	34	53	34
3	.....	.....	57	26	80	23	73	35	67	36	61	43	64	36	70	37	70	29	65	36	70	30	69	36	.....	.....	75	32
4	.....	.....	70	27	82	34	75	50	74	47	66	58	68	42	72	49	73	40	70	48	66	32	71	42	68	39	60	42
5	.....	.....	58	34	86	48	67	26	59	32	68	62	76	61	74	60	73	60	71	48	41	16	77	54	48	25	72	42
6	.....	.....	35	11	87	34	49	15	32	17	66	44	61	34	68	32	67	32	48	24	23	2	54	27	30	10	42	21
7	.....	.....	22	4	60	23	32	10	27	13	44	28	34	23	33	24	34	22	24	17	15	1	33	20	35	10	26	17
8	.....	.....	23	2	46	28	42	10	40	14	36	27	35	25	36	24	32	17	32	15	42	− 1	42	22	37	5	34	16
9	.....	.....	30	8	51	32	53	23	43	21	43	34	61	35	44	31	43	26	42	23	50	6	47	32	48	17	45	26
10	.....	.....	51	18	61	27	77	38	47	41	63	42	48	41	70	42	66	34	55	38	60	29	48	37	44	26	46	36
11	.....	.....	43	30	69	42	69	31	57	24	64	54	63	48	70	49	45	34	56	33	55	21	72	48	47	27	67	34
12	.....	.....	44	21	65	41	61	18	39	17	54	37	55	32	49	32	45	28	40	23	54	8	54	31	38	15	43	23
13	.....	.....	53	24	65	47	62	28	52	25	54	42	61	34	61	37	68	27	57	28	58	21	62	33	50	26	60	27
14	.....	.....	62	31	64	41	70	28	52	30	56	49	62	45	65	44	62	38	57	35	57	15	58	50	50	21	61	39
15	.....	.....	66	29	69	55	70	37	62	50	62	56	76	55	69	56	69	49	66	52	63	27	65	55	63	28	70	55
16	.....	.....	58	48	81	52	72	45	70	62	62	58	75	65	74	61	68	55	68	61	52	43	72	64	66	43	72	64
17	.....	.....	60	38	82	53	77	45	73	61	67	60	73	65	75	65	73	63	67	62	65	34	70	61	77	54	67	60
18	.....	.....	64	32	77	55	77	32	66	44	67	60	75	65	77	64	75	57	69	56	60	24	74	53	63	33	69	49
19	.....	.....	64	36	80	71	80	43	68	50	69	61	75	62	74	62	70	53	71	59	67	31	73	58	73	39	72	52
20	.....	.....	55	36	84	56	67	39	66	31	70	49	78	52	79	43	75	42	69	36	57	25	69	41	68	32	69	38
21	.....	.....	43	30	76	44	51	28	40	26	52	45	52	39	51	41	51	37	46	33	43	15	48	37	46	19	46	31
22	.....	.....	52	31	61	43	69	33	49	40	65	52	56	45	64	50	46	40	55	43	60	29	50	40	45	35	48	42
23	.....	.....	55	35	73	59	65	37	64	45	65	60	60	50	69	58	70	46	59	50	54	37	68	47	55	26	70	48
24	.....	.....	52	29	80	39	62	33	52	37	63	55	63	50	66	49	59	48	53	43	59	20	66	49	54	34	58	43
25	.....	.....	55	27	74	47	70	31	65	33	62	52	65	52	67	46	49	42	57	38	62	19	64	44	63	33	60	39
26	.....	.....	60	29	76	48	63	43	53	47	57	51	57	46	55	49	54	49	49	45	52	21	59	50	66	30	54	47
27	.....	.....	56	34	73	55	64	28	56	36	56	48	62	50	56	44	55	40	50	38	61	22	60	42	60	30	54	39
28	.....	.....	56	29	76	31	63	37	60	40	61	45	65	35	65	39	63	30	60	39	61	26	68	38	59	30	63	47
29	.....	.....	61	28	76	38	74	29	68	39	61	50	66	35	65	44	66	30	62	39	67	27	67	39	70	33	65	34
30	.....	.....	62	40	83	49	69	42	64	44	67	58	72	51	71	54	77	41	70	50	56	36	75	51	66	41	74	49
31	.....	.....	60	32	81	58	72	27	50	35	58	47	74	60	61	43	68	44	54	36	55	19	61	42	53	25	55	34
Mns.	.....	.....	52.8	27.8	73.7	43.6	65.8	31.9	56.4	35.8	60.1	49.1	63.1	45.6	63.8	45.7	61.0	39.6	57.0	39.5	55.0	22.1	62.1	42.7	56.0[a]	28.5[a]	59.0	38.2

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

While the month averaged much colder than the normal, mean temperatures were not so low as those for December, 1909. It will be long remembered, however, on account of the low temperatures that prevailed from the 5th to the 12th, in common with the rest of the southwestern part of the country. Over a large area in the central and southern parts of the district, except the western part of Arizona, minimum temperatures were the lowest of record, and fruit interests suffered in consequence. In western Colorado heavy damage resulted from the killing of the buds of stone fruits, and it is probable that the trees are also damaged. In the Salt River Valley, in Arizona, the Section Director reports that the damage to the citrus-fruit industry is estimated to be between $100,000 and $200,000. The loss was confined mostly to nursery stock and young orchards. The older trees are apparently but slightly injured, owing to their dormant condition at the time of the freeze. Less than 5 per cent of the crop was unpicked. Following the receipt of the cold-wave warning on the night of the 4th, there was considerable fruit picked on the 5th, and smudging operations were carried on successfully on the following cold nights by a few of the nurserymen. In the Yuma district the freeze was not so severe, and but little loss to horticultural interests was reported.

Streams were hard frozen in the northern and central parts of the district, and a diminished flow or dry beds in more southerly parts caused suffering to live stock on the ranges.

The precipitation was less than the average on the different watersheds, except the Grand; the amounts, however, on the San Juan and the watersheds of western New Mexico and Arizona were in excess of those of a year ago.

The conditions that led up to the severe weather may be briefly stated as having their start in a low-pressure area on the morning of the 4th, extending from Arkansas on the east to the lower Colorado River. In this region the pressure was more than half an inch below the normal, while in the distant Northwest there was an excess of four-tenths of an inch, but unaccompanied by unusually low temperatures. During the next 24 hours there was a movement of the anticyclone southward on the east side of the Continental Divide, blocking any further progress eastward of the western depression then central in southwestern Colorado, and at the same time forcing the eastern part of the depression southward to the west coast of the Gulf of Mexico. During the slow progress of filling up the depression west of the Continental Divide, extremely cold weather developed, and temperatures as low as or lower than any previously observed occurred in many localities.

TEMPERATURES.

The mean for the stations reporting was 27.9°, or 5.1° below the normal. The mean for January, 1912, was 33.5°. The highest monthly mean was 52.8° at Sentinel, Ariz., and the lowest, 3.1°, at Gunnison, Colo. The first four days were somewhat warmer than the normal in northern Arizona and southeastern Nevada. A severe and general cold spell set in on the 5th and lasted until the 13th, with the greatest deficiency in mean temperatures, 21° to 32°, on the 6th and 7th. From the 14th to the 19th temperatures were close to the normal in Arizona, and generally above the normal in the rest of the district.

A change to colder occurred on the 20th and lasted over the greater part of the district until the 24th. The rest of the month was warmer than the normal, except in Grand Valley, Colo. The highest temperatures occurred at a number of stations in the Utah, New Mexico, and Arizona areas during the first 4 days, but for the most part they occurred on different dates in the last 2 decades. Most of the minimum temperatures at stations in western Wyoming, western Colorado, and eastern Utah occurred on the 6th and 7th, in New Mexico on the 7th and 8th, and in Arizona on the 6th, 7th, and 8th. Zero temperature or lower occurred at all stations except 2 each in eastern Utah and southeastern Nevada, and 17 in Arizona. The highest temperature, 79°, occurred at Parker, Ariz., on the 25th, and the lowest, −54°, at Steamboat Springs, Colo., on the 7th.

Details of temperature are summarized in the following table:

Areas of States in district No. 9.	Temperature.					
	Mean.	Departure from normal.	Highest.	Station.	Lowest.	Station.
		° F.				
Western Wyoming	13.0	−5.4	50	Wamsutter	−44	Daniel.
Western Colorado	14.4	−6.5	52	Glenwood Springs.	−54	SteamboatSprings.
Eastern Utah	19.7	−4.9	65	St. George	−50	Strawberry Tunnel (east).
Western New Mexico	28.9	−4.8	68	Lordsburg	−27	Dulce.
Arizona	38.7	−4.7	79	Parker	−27	Flagstaff No. 1.
Southeastern Nevada	32.9	−1.6	71	2 stations	− 9	Caliente.

PRECIPITATION.

The average for the stations reporting was 0.74 inch, or 0.36 inch less than the normal. The average for January, 1912, was 0.43 inch. Precipitation occurred somewhere in the district every day but the 27th. In the northern half of the district it was rather general on the 1st, 4th, 5th, 10th, 16th, 17th, and 23d, while in New Mexico and Arizona it occurred principally on the 10th and 11th, and 21st and 22d. The greatest monthly amount was 3.73 inches at Crested Butte, Colo., while none occurred at Hurricane, and Woodside, Utah, and Winslow, Ariz. Monthly snowfalls of 10 inches or more occurred at 2 stations in western Wyoming, 34 in western Colorado, 5 in eastern Utah, 7 in western New Mexico, and 8 in Ari-

zona. The greatest monthly fall, 41.5 inches, occurred at Crested Butte, Colo. The average number of days with 0.01 inch or more precipitation was 4 in western Wyoming, 7 in western Colorado, 2 in eastern Utah, 3 in western New Mexico, 3 in Arizona, and 1 in southeastern Nevada. For the district as a whole the average was 4 days.

The average precipitation and departures from the normal on the different watersheds are given in the following table:

Watershed.

Green.		Grand.		San Juan.		Little Colorado.		Gila.		Mimbres.		Colorado proper.	
Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.
0.54	−0.26	1.14	+0.03	1.11	−0.44	0.60	−0.88	0.66	−0.44	0.69	−0.03	0.47	−0.57

MISCELLANEOUS.

The average amount of sunshine, with departures from the normal, was as follows: Grand Junction, 75, +19 per cent; Durango, 74, +6 per cent; Phoenix, 86, +16 per cent; and Yuma, 85, +11 per cent.

The relative humidity reported was: Grand Junction, 73; Durango, 65; Phoenix, 66; and Yuma, 44 per cent.

SNOWFALL IN THE MOUNTAINS.

Western Wyoming.—At the close of the month there was practically no snow at 6,000 feet elevation. At 7,000 feet the depth averaged about 6 inches, the depth increasing with elevation. It is generally well packed.

Western Colorado.—The addition to the snowfall during January was not great, and the seasonal fall is still below the average on all watersheds. Slightly more than the usual January fall occurred locally on the Grand and Gunnison watersheds, but a deficiency was general in the region drained by the San Juan, White, and Yampa Rivers. Much drifting resulted from the prevailing strong winds, which have carried considerable snow from the open to the timber and gulches. Owing to persistent low temperatures, the usual amount of settling did not occur, and therefore the water content of the snow as compared with the depth is relatively small. There was some benefit from the intense cold, for it reduced the amount of water reaching the trunk streams, and there was a flooding of areas adjacent to the small streams, resulting in large accumulations of ice. At the end of January the average depth on the Grand watershed, average elevation 8,600 feet, was 21 inches, or 5 inches less than at the end of January, 1912. For the Gunnison, 8,800 feet, the depth was 19 inches, or 4 inches less; and for the Yampa and White, 8,000 feet, 21 inches, or 9 inches less than at the corresponding date last year. On the other hand, for the San Juan and Dolores, 7,800 feet, the average, 10 inches, is 5 inches more than a year ago.

Eastern Utah.—The depth of snow in the upper reaches of the tributaries of the Colorado at the end of January ranged from 2 to 5 feet, but it was comparatively dry, owing to continued cold. In the southern portions of Utah the depth in the mountains was generally less than 1 foot. All stations, however, did not report the outlook unfavorable or poorer than the average.

Western New Mexico.—In the San Juan basin the snowfall was light. Conditions were favorable in the San Francisco, Gila, and Mimbres drainage areas, owing to an excess of precipitation during the month. The additions to the soil moisture and the depth of snow give unusual promise for abundant water.

Arizona.—The snow in the mountains of the Verde watershed was increased during the month, and but little melting occurred. Except on the western and southern divides there is practically no snow on the Little Colorado watershed, many stations in that region reporting the driest winter in years. In the mountains of the east the depth of snow was generally less than at the end of December, owing to melting, which occurred during the last 5 days of January.

TABLE 1.—*Climatological data for January, 1913. District No. 9, Colorado Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Battle Mountain	Carbon	7,30	1	16.0	.....	42[b]	14	− 37[b]	7	40[b]	0.20	.....	0.20	2.0	1	6[i]	14[i]	2[i]	sw.	U. S. Forest Service.
Big Piney	Lincoln																			Ira Dodge.
Daniel	do	6,740	14	7.6	− 5.4	38	25	− 44	6	47	1.12	− 0.03	0.32	14.0	6	7	18	6	nw.	J. M. Van Dervort.
Eden	Sweetwater	6,577	4	11.6	.....	40	15†	− 36	6	47	T.	.....	T.	T.	0	12	10	9	w.	Eden Valley L. & I. Co.
Green River	do	6,083	8	18.8	.....	44	15	− 26	6	42	0.10	.....	0.10	1.0	1	13	18	0	w.	Geo. H. Maxom.
Pinedale	Fremont	7,176	7	10.4	.....	41[a]	25	− 41[a]	6	46[a]	0.44	.....	0.10	9.0	9	11[a]	12[a]	7[a]	nw.	U. S. Forest Service.
Wamsutter	Sweetwater			16.7	.....	50	29	− 28	6	46	0.27	.....	0.08	5.2	5	13	7	11	sw.	T. C. Sherman.
Willow Creek Cabin	Fremont	7,500	4	10.2	.....	40[a]	26	− 31[a]	7	48[a]	1.09	.....	0.36	17.0	6	6[c]	1[c]	9[c]	n.	U. S. Forest Service.
Colorado.																				
Breckenridge	Summit	9,536	24	10.4	− 5.4	38	14	− 40	7	51	1.00	− 0.71	0.30	12.0	7	17	1	13	n.	Albert S. McCullough.
Buford	Rio Blanca		2																	Mrs. H. Genier.
Cascade	San Juan	8,900	6								1.99	.....	1.11	25.0	4	14[j]	2[j]	5[j]	w.	San Juan W. & P. Co.
Cedaredge	Delta	6,175	15	19.0	− 7.4	49	14	− 23	7	38	0.81	+ 0.04	0.35	9.0	3	20	7	4	.....	Harry A. Corbbett.
Cochetopa	Saguache	9,088	4								0.61	.....	0.25	6.0	3	7	8	16	w.	Miss Bessie McDonough.
Collbran	Mesa	6,000	20	17.5	− 6.4	47	15	− 22	7	30	1.21	+ 0.06	0.35	24.0	10	16	5	10	sw.	A. A. Wood.
Columbine	Routt	8,766	3								0.14	.....	0.05	12.0	5	12	16	3	sw.	Mrs. M. A. Caron.
Columbine Ranch	Delta	6,925	3								1.90	.....	0.64	19.0	4	16	5	10	s.	George W. Wade.
Corona	Grand	11,660	6	3.2	.....	21	13†	− 27	5	28	3.66	.....	1.10	.....	12	.....	.....	.....	w.	U. S. Weather Bureau.
Cortez	Montezuma	6,100	2																	W. G. Clucas.
Craig	Moffat		3																	Joseph F. Haubrich.
Crawford (near)	Montrose	6,600	3	18.2	.....	46	28	− 24	7	39	1.13	.....	0.36	20.0	7	22	5	4	.....	C. W. Roe.
Crested Butte	Gunnison	8,867	3	6.2	.....	35	14†	− 40	7	47	3.73	.....	0.92	41.5	8	12	11	8	.....	Charles L. Ross.
Delta	Delta	4,965	23	15.1	−10.4	45	18†	− 36	7	43	0.71	+ 0.14	0.30	11.0	5	13	15	3	.....	E. M. Getts.
Durango	La Plata	6,534	18	21.7	− 2.8	48	29	− 13	7	39	0.78	− 0.50	0.40	8.6	6	16	6	9	nw.	U. S. Weather Bureau.
Eureka	San Juan	10,000	6								1.72	.....	0.68	18.0	7	14	6	11	s.	San Juan W. & P. Co.
Fraser	Grand	8,560	4	7.0	.....	42	25	− 38	6†	64	0.90	.....	0.25	10.0	7	4	4	23	n.	L. D. C. Gaskill.
Fruita	Mesa	4,510	14	12.0	−10.8	44	19†	− 34	7	43	0.70	− 0.13	0.20	8.9	6	17	7	7	.....	J. B. Willsea.
Glade Park	do	7,000	2								1.06	.....	0.50	15.5	6	19	6	6	sw.	A. F. Terrill.
Gladstone	San Juan	10,400	6								3.01	.....	1.01	35.3	9	11	4	16	ne.	San Juan W. & P. Co.
Glenwood Springs(near)	Garfield	5,823	15	14.9	− 8.2	52	15	− 38	7	46	0.47	− 0.71	0.20	12.0	4	12	6	13	n.	E. A. O'Neil.
Grand Junction	Mesa	4,602	22	15.9	− 8.8	46	30	− 19	7	39	0.62	+ 0.13	0.31	9.3	8	14	9	8	nw.	U. S. Weather Bureau.
Grandlake	Grand	8,153	5								1.55	.....	0.60	15.5	3	21	5	5	w.	Mrs. Belle Kauffman.
Grand Valley	Garfield	5,089	21	17.8	− 7.1	48	15†	− 25	7	48	0.62	− 0.34	0.33	10.0	7	14	6	11	.....	David Evans.
Gunnison	Gunnison	7,670	20	3.1	− 4.6	36	30	− 43	7	56	0.35	− 0.44	0.10	5.7	6	20	8	3	.....	Clarence Adams.
Hesperus (near)	La Plata	7,610	1								0.30	.....	0.12	8.0	4	14	5	12	.....	G. F. Snyder.
Horsefly	Montrose	8,700	3								0.64	.....	0.16	12.0	5	17	5	9	sw.	Lawrence J. Finch.
Ironton	Ouray	10,000	3								1.43	.....	0.58	19.4	6	12	6	13	sw.	Mrs. Amanda E. Foley.
Lake City	Hinsdale	8,686	8	10.8	.....	43	3	− 30	7	54	0.45	.....	0.31	7.2	6	17	5	9	s.	J. F. Maurer.
Lay	Moffat	6,190	19	13.2	− 5.5	44	25	− 41	7	57	0.78	− 0.22	0.27	12.0	6	12	5	14	.....	A. G. Wallihan.
Mancos	Montezuma	6,960	14	21.6	− 5.7	51	26	− 24	7	52	0.95	− 0.48	0.30	9.8	6	16	8	7	nw.	B. M. Krumpanitzky.
Marble	Gunnison	7,951	4	16.4	.....	45	14	− 38	7	54	1.45	.....	0.36	20.0	7	21	2	8	e.	F. E. Morse.
Marshall Pass	Saguache	10,846	10								1.91	+ 0.21	0.78	23.0	7	9	8	14	.....	Wm. L. Williams.
Meeker (near)	Rio Blanca	6,182	21	14.5	− 6.5	45	14†	− 43	7	48	0.78	− 0.23	0.30	15.5	6	16	7	8	sw.	T. Baker.
Montrose	Montrose	5,811	24	19.8	− 4.7	45	15	− 25	7	39	0.60	− 0.06	0.37	8.0	8	19	8	4	.....	U. S. Reclamation Service.
Nast	Pitkin	7,953	3	12.5	.....	42	25†	− 34	7	52	1.10	.....	0.30	18.3	7	17	3	11	w.	Arthur Hanthorn.
Pagosa Springs	Archuleta	7,108	6	12.6	.....	44	28	− 30	8	59	0.71	.....	0.30	9.2	6	17	10	4	.....	E. T. Walker.
Palisades	Mesa	4,729	2	15.9	.....	44	19	− 23	7	43	0.06	.....	0.02	5.0	4	19	8	4	.....	E. P. Updegraff.
Paonia	Delta	5,694	18	18.5	− 8.8	48	15	− 28	7	39	1.37	+ 0.27	0.35	13.5	7	15	10	6	sw.	J. M. Underwood.
Pitkin	Gunnison	9,500	4																	Mrs. Maggie Cammann.
Pyramid	Rio Blanca		2																	E. E. Egry.
Rangely	do	5,050	14																	J. H. McGuire.
Redcliff	Eagle	8,695	20								3.45	+ 1.56	0.74	38.5	13	16	2	13	.....	Dorothea Greiner.
Redvale	Montrose	6,300	....	19.2	.....	45	14	− 30	7	44	0.85	.....	0.28	10.0	5	19	5	7	.....	Dr. E. S. C. Foster.
Rico	Dolores	8,824	11																	Clinton B. Smith.
Rifle	Garfield	5,437	2	15.2	.....	42	15†	− 33	7	39	0.59	.....	0.37	7.0	5	15	5	11	e.	Herman Eiche.
River Portal	Montrose	6,570	7	15.4[d]	.....	39	14	− 22[e]	7	38[d]	0.74	.....	0.18	12.1	7	16[a]	1[a]	13[a]	.....	U. S. Reclamation Service.
Sapinero (near)	Gunnison	8,125	10	9.8	− 5.9	35	3	− 29	7	42	1.45	+ 0.02	0.30	20.4	10	18[a]	2[a]	10[a]	w.	W. F. Irving.
Shoshone	Garfield	6,110	3	19.0	.....	50	15	− 25	7	38	0.65	.....	0.30	22.0	10	13	8	10	.....	Central Colorado Power Co.
Silverton (near)	San Juan	9,400	6	13.1	.....	46	27	− 29	7	56	2.84	.....	1.90	18.5	6	15	5	11	sw.	San Juan W. & P. Co.
Spruce Lodge	Grand	9,600	5								1.29	.....	0.29	25.5	10	15	4	12	nw.	H. J. Wills.
Steamboat Springs	Routt	6,683	10	12.0	− 1.9	48	15	− 54	7	51					7	17	4	10	.....	Herbert B. Gee.
Tacoma	La Plata	7,300	6								0.75	.....	0.35	15.0	4	15	5	11	s.	San Juan W. & P. Co.
Telluride	San Miguel	8,756	1	19.1	.....	44	25†	− 26	7	56	2.71	.....	0.74	27.6	9	19	3	9	se.	Wm. T. March.
Terminal Dam	La Plata	8,300	6								1.37	.....	0.49	19.5	5	18	4	9	sw.	San Juan W. & P. Co.
Yampa (near)	Routt	8,000	4								1.75	.....	0.39	15.5	9	10	13	8	n.	Percy A. Hughes.
Utah.																				
Aneth	San Juan	4,800	9	21.0	.....	51	26	− 29	7	41	0.25	.....	0.22	5.5	2	25	2	4	.....	H. R. Antes.
Bluff	do	4,200	1	26.0	.....	45	1†	− 20	7	40	0.43	.....	0.35	6.5	2	17	10	4	.....	H. H. Redd.
Boneta	Wasatch	6,750									0.64	.....	0.20	6.5	5				sw.	Oscar Wilkins.
Canaan	Washington																			J. M. Lauritzen.
Castle Dale	Emery	5,500	14	11.5	− 9.8	47	30	− 27	7	55	0.40	− 0.26	0.30	.....	2	24	7	0	.....	Miss May Jeffs.
Cisco	Grand	4,447	14	9.0	.....	50	17†	− 24	7†	58	0.70	+ 0.13	0.50	7.0	2	21	5	5	.....	J. J. Anderson.
Dragon	Uinta	6,000	2	17.6	.....	49	3	− 23	7	36	0.33	.....	0.18	3.0	3	12	9	10	n.	H. D. Ford.
Duchesne	Wasatch	5,500	6	15.9	.....	53	3	− 25	7	52	0.21	.....	0.07	2.1	6	12	12	7	.....	M. M. Smith.
Elkhorn	Uinta	6,657	3																	Chas. De Moisy, jr.
Emery	Emery	6,200	12	20.4	− 5.0	46	2†	− 11	6†	54	0.20	− 0.22	0.20	2.0	1	11	3	17	e.	H. C. Wickman.
Escalante	Garfield	5,700	10																	Geo. H. Barney.
Fort Duchesne	Uinta	5,700	24	15.0[b]	+ 2.4	44[b]	15	− 17[b]	7	34[b]	0.01	− 0.48	0.01	.....	1	13[b]	4[b]	6[b]	w.	Geo. W. Dickson.
Fruitland	Wasatch	7,625	1	24.9	.....	48	4	− 9	10	43	0.15	.....	0.08	.....	3	25	4	2	w.	J. Peter Naab.
Grayson	San Juan	6,000	6	23.4	.....	47	24	− 15	7	28	1.27	.....	0.60	12.5	4	18	5	8	.....	E. F. Thompson.
Green River	Emery	4,080	13	19.2	− 5.7	49	30	− 14	7	41	T.	− 0.25	T.	T.	0	19	12	0	sw.	Edgar E. Adams.
Hanksville	Wayne	4,200	3	15.5	.....	45	16†	− 26	7	39	0.32	.....	0.20	3.2	2	22	8	1	sw.	F. J. Weber.
Hite	Garfield	3,500	13	29.3	− 7.0	57	30	1	11	33	0.31	− 0.28	0.18	4.0	2	15	13	3	.....	John P. Hite.
Hurricane	Washington	3,800	1								0.00	.....	0.00	0	0	18	6	7	.....	Amos Workman.
Kanab	Kane	4,925	6	25.0	.....	54	25†	− 13	11	37	0.60	.....	0.37	.....	2	.....	.....	.....	.....	A. A. Farming Association.
La Sal	San Juan	7,000	10	20.0	.....	45	3	− 22	7	34	0.08	.....	0.08	.....	1	14	9	8	.....	Gertrude W. Carpenter.
Leeds (near)	Washington										T.	.....	T.	T.	0	18	3	10	.....	B. F. Anderson.
Loa	Wayne	7,000	20																	W. S. McClellan.
Manila	Uinta	6,225	3	19.5	.....	50	29	− 32	6	48	0.04	.....	0.04	.....	1	9	17	5	.....	Daniel M. Nelson.
Moab	Grand	4,000	23	21.0	− 8.8	49	19†	− 18	7	32	0.94	+ 0.27	0.60	10.5	4	13	6	12	.....	Henry Crouse.
Monticello	San Juan	7,545	4	21.0	.....	42	28	− 7	8	35	1.30	.....	1.20	13.0	2	21	5	5	sw.	Geo. F. Barton.
New Harmony	Washington	5,200	1	.....	.....	.....	.....	.....	.....	.....	0.21	.....	0.21	.....	1	.....	.....	.....	.....	Geo. F. Prince.

TABLE 1.—*Climatological data for January, 1913. District No. 9*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Utah—Continued.																				
Orderville	Kane	6,660	3	.....	.....	.....	.....	.....	.....	.....	1.03	.....	0.55	.....	3	.....	.....	.....	.....	F. A. Porter.
Pine Valley	Washington	6,000	2	.....	.....	.....	.....	.....	.....	.....	1.00	.....	0.90	8.0	2	13[b]	12[b]	4[b]	n.	Mason Gardner.
Price	Carbon	5,557	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. H. Thom[illegible]n.
Ranch	Kane	6,700	10	19.1	.....	54	1	− 13	10	52	1.24	.....	0.80	.....	2	27	1	3	n.	J. W. Seaman.
San Rafael	Emery	4,250	1	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	1.0	1	25	3	3	ne.	J. J. Nouguier.
St. George	Washington	2,880	26	34.0	− 3.6	65	26	3	7	45	0.03	− 0.97	0.03	.....	1	16	6	9	.....	A. B. Ballantyne.
Scofield	Carbon	7,625	3	12.8	.....	44	4	− 41	6	69	0.83	.....	0.59	18.0	5	17	0	14	s.	B. Newren.
Springdale	Washington	3,500	5	21.8	.....	40	22†	− 5	10	35	0.70	.....	0.70	7.0	1	18	1	12	.....	Hattie Wood.
Strawb'ry Tun'l (East)	Utah	7,500	5	7.0[f]	.....	34	28	− 50	5	67	3.45	.....	0.60	34.5	10	13	10	8	.....	U. S. Reclamation Service.
Teasdale	Wayne	7,000	3	20.8	.....	53	3	− 18	6	40	0.20	.....	0.10	2.0	2	19	8	4	w.	Henry Cullum.
Thompsons	Grand	5,150	2	18.4	.....	44	15	− 17	7	33	0.18	.....	0.07	4.0	4	18	7	6	sw.	A. M. Starmont.
Tropic	Garfield	7,000	16	22.2	− 5.0	51	3†	− 12	21†	54	0.08	− 0.83	0.06	0.8	3	23	3	5	nw.	E. P. Bolton.
Troutcreek Ranger	Uinta	9,200	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Forest Supervisor.
Vernal	....do	5,050	16	16.2	− 2.0	44	30	− 20	7	38	0.30	− 0.34	0.30	2.0	1	23	5	3	.....	S. P. Trim.
Victor	Emery	5,250	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. F. Noyes.
White Rocks	Uinta	6,200	1	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.20	3.0	2	18	9	4	.....	C. F. Keil.
Woodside	Emery	4,645	2	23.3	.....	49	17†	− 16	7	45	0.00	.....	0.00	0	0	24	7	0	s.	D. P. Adams.
New Mexico.																				
Alma	Socorro	5,500	16	34.2	− 3.6	64	3	− 8	8	50	0.65	− 0.26	0.37	8.0	5	18	7	6	sw.	Max A. Balke.
Aragon	....do	.....	6	23.4	.....	59	3	− 20	8	51	0.95	.....	0.35	9.5	3	22	5	4	sw.	John R. Milligan.
Aztec	San Juan	5,590	13	.....	.....	.....	.....	.....	.....	.....	0.13	− 0.39	0.13	1.5	1	13	17	1	sw.	Dr. T. J. West.
Bergers Ranch	McKinley	8,000	1	24.2	.....	58	28	− 24	7	53	2.10	.....	0.70	18.5	4	10	13	8	w.	Herman Berger.
Blackrock	....do	6,500	4	18.9	.....	58	4	− 22	6	63	0.27	.....	0.15	4.2	2	22	2	7	e.	Patrick DesGeorges.
Bloomfield	San Juan	5,500	18	23.8	− 3.6	53	14†	− 16	7	45	0.10	− 0.36	0.08	1.8	2	18	8	5	sw.	Fred Le Clerc.
Cambray	Luna	4,215	14	.....	.....	.....	.....	− 9	7	.....	0.59	+ 0.24	0.53	4.5	2	18	7	6	w.	Agent Southern Pacific R. R.
Cliff	Grant	4,470	13	32.4	− 8.5	66	3†	− 7	8	62	0.73	− 0.31	0.25	11.5	4	22	8	1	.....	W. C. Belden.
Columbus	Luna	4,054	4	.....	.....	66	4	− 6	8	.....	0.58	.....	0.38	5.0	2	20	1	10	sw.	Agent E. P. & S. W. R. R.
Deming	....do	4,333	36	35.5	.....	65	4	− 7	8	45	0.20	− 0.31	0.26	2.0	1	27	1	3	.....	Agent Southern Pacific R. R.
Dulce	Rio Arriba	6,756	16	15.8	− 4.5	44	14†	− 27	8	54	0.61	− 0.64	0.21	9.0	4	21	8	2	w.	William R. Beyer.
Fort Bayard	Grant	6,152	38	35.2	− 3.5	64	3	− 12	7	43	0.72	− 0.10	0.40	13.2	6	21	5	5	w.	U. S. General Hospital.
Fruitland	San Juan	4,800	19	25.7	− 4.3	53	14†	− 10	7	47	T.	− 0.25	T.	T.	0	21	10	0	nw.	Cyril J. Collyer.
Gage	Luna	4,486	13	36.6	.....	63	4	− 9	8	43	0.40	+ 0.06	0.25	6.0	2	27	0	4	.....	Agent Southern Pacific R. R.
Gila Planting Station	Grant	6,475	2	33.7	.....	62	3	− 10	7	48	0.99	.....	0.60	17.0	6	21	4	6	w.	U. S. Forest Service.
G. O. S. Ranch	....do	8,000	1	28.3	.....	60	3	− 18	7	46	1.34	.....	0.49	18.3	7	16	10	5	w.	Victor Culberson.
Hachita	....do	4,504	4	.....	.....	65	4	− 10	7	.....	0.52	.....	0.20	3.5	5	23	2	6	sw.	Agent E. P. & S. W. R. R.
Haynes	Rio Arriba	6,600	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. John R. Haynes.
Hermanes	Luna	4,451	4	.....	.....	.....	.....	.....	.....	.....	0.34	.....	0.14	4.0	3	24	2	5	w.	Agent E. P. & S. W. R. R.
Lordsburg	Grant	4,245	30	37.0	− 5.7	68	15	− 9	7	47	1.00	+ 0.36	0.61	6.8	4	22	4	5	w.	J. H. McClure.
Luna	Socorro	7,300	9	24.7	.....	53	3	− 17	8†	51	0.75	− 0.19	0.30	7.5	4	14	15	2	w.	Charles B. Martin.
Mimbres	Grant	5,007	8	.....	.....	.....	.....	− 7	7	.....	0.72	.....	0.47	8.5	2	20	6	5	.....	Charles Dennis.
Pinos Altos (near)	....do	7,253	2	.....	.....	.....	.....	− 14	8	.....	0.97	.....	0.36	16.5	5	17	11	3	nw.	O. L. Scott.
Pratt	....do	4,415	4	.....	.....	66	19	− 2	8	.....	0.50	.....	0.20	7.5	4	22	2	7	sw.	Agent E. P. & S. W. R. R.
Putnam	San Juan	6,200	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. F. Spader.
Redrock	Grant	4,150	8	.....	.....	.....	.....	− 2	8	.....	0.69	.....	0.43	5.8	6	20	6	5	.....	Robt. H. Woods.
Rodeo	....do	4,118	4	.....	.....	64	1†	− 6	7	.....	0.53	.....	0.25	6.0	3	22	7	2	.....	Agent E. P. & S. W. R. R.
Silver City	....do	5,860	2	32.4	.....	58	3	− 12	7	44	1.18	.....	0.48	1.18	6	21	6	4	n.	E. M. Brumback.
Arizona.																				
Allaires Ranch	Cochise	4,184	17	.....	.....	.....	.....	.....	.....	.....	0.60	− 0.23	0.30	3.0	2	23	1	7	.....	Thomas Allaire.
Alpine	Apache	8,500	2	25.2	.....	55	3†	− 15	8	61[c]	0.29	.....	0.10	8.0	4	16	10	5	w.	U. S. Forest Service.
Ashfork	Yavapai	5,229	1	.....	.....	.....	.....	.....	.....	.....	0.70	.....	0.60	7.0	2	25	3	3	.....	Do.
Aztec	Yuma	492	14	48.4	− 6.1	77	31	16	7	41	0.20	− 0.16	0.20	0	1	27	0	4	sw.	Agent Southern Pacific Ry.
Benson	Cochise	3,523	28	42.3	− 5.3	70	3†	5	7	48	0.54	0.00	0.30	3.0	2	22	0	9	.....	Do.
Bisbee	....do	5,500	23	41.6	− 3.8	64	3	8	8	35	0.62	− 0.49	0.45	1.6	2	22	0	9	.....	Bisbee High Schools.
Blue	Greenlee	6,000	2	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.30	5.0	2	22	3	6	s.	Mary A. Jones.
Bonita	Graham	4,916	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. H. Jelley.
Bowie	Cochise	3,756	35	43.4	+ 0.2	69	4	10	8	41	0.35	− 0.74	0.25	6.0	2	21	8	2	w.	Agent Southern Pacific Ry.
Buckeye	Maricopa	980	20	45.4	− 7.9	73	28†	11	6†	43	0.40	− 0.53	0.29	0	2	26	4	1	w.	H. E. Kell.
Canille	Santa Cruz	5,225	4	.....	.....	.....	.....	.....	.....	.....	0.81	.....	0.28	7.0	4	19	9	3	sw.	Robert A. Rodgers.
Casa Grande	Pinal	1,396	30	.....	.....	.....	.....	.....	.....	.....	0.70	− 0.13	0.40	0	3	28	0	3	.....	Agent Southern Pacific Ry.
Casa Grande Ruins	....do	1,422	5	45.4	.....	73	4	8	7	44	0.69	.....	0.40	0	3	22	5	4	sw.	Frank Pinkley.
Chandler	Maricopa	1,217	17	45.4	− 6.4	72	27†	9	7	43	0.40	− 0.68	0.25	0	2	21	9	1	nw.	F. V. N. Dana.
Chin Lee	Apache	6,000	5	23.2	.....	55	29	− 20	7	49	0.15	.....	0.10	1.5	2	12	17	2	sw.	Rev. L. Ostermann, O. F. M
Chlarson's Mill	Graham	8,000	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hiram R. Chlarson.
Clifton	Greenlee	3,584	22	40.6	.....	63	30	13	8	31	0.93	− 0.19	0.61	0.8	3	22	6	3	.....	Ariz. & N. Mex. Ry. Co.
Cline	Gila	2,300	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. M. Clanton.
Cochise	Cochise	4,219	13	35.6	− 9.8	67	3†	0	7	53	0.20	− 0.46	0.20	2.0	2	23	0	8	sw.	Agent Southern Pacific Ry.
Columbia	Yavapai	1,900	14	46.0	− 6.5	73	29	16	7	29	0.95	− 0.88	0.55	4.0	2	24	2	5	se.	M. J. Nolan.
Courtland	Cochise	4,543	4	.....	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	2.0	1	23	0	8	.....	Agent E. P. & S. W. R. R.
Dos Cabezos	....do	5,250	5	36.4	.....	60	15	− 10	7	44	1.03	.....	0.52	12.0	5	23	2	6	w.	Neil Erickson.
Douglas	....do	3,930	10	42.9	− 3.8	70	3†	− 7	7	46	1.12	+ 0.52	0.40	6.0	5	22	6	3	sw.	Dr. F. T. Wright.
Dudleyville	Pinal	2,204	21	46.4	− 1.6	72	4	9	7	50	1.23	− 0.13	0.69	0.5	5	12	10	9	sw.	George F. Cook.
Elgin	Santa Cruz	.....	.....	41.0	.....	65	15†	5	12	39	1.88	.....	1.00	8.8	5	15	10	6	sw.	George Beebe.
Fairbank	Cochise	3,862	4	.....	.....	.....	.....	.....	.....	.....	0.22	.....	0.12	T.	2	24	0	7	.....	Agent E. P. & S. W. R. R.
Flagstaff	Coconino	6,907	15	21.2	− 5.5	59	3	− 23	11	50	0.76	− 1.50	0.31	8.0	5	15	6	10	w.	George T. Herrington.
Flagstaff (1)	....do	7,500	4	17.6	.....	58	3	− 27	7	59	0.99	.....	0.54	10.8	4	23	2	6	sw.	U. S. Forest Service.
Florence	Pinal	1,504	14	47.0	− 3.6	72	4	11	6	44	0.63	− 0.39	0.38	0	2	18	0	13	w.	Agent Ariz. Eastern R. R.
Fort Apache	Navajo	5,200	42	32.6[e]	− 3.2	.....	.....	− 5	8	52[i]	0.67	− 0.64	0.25	6.7	4	13	0	18	sw.	Post Surgeon, U. S. Army.
Fort Huachuca	Cochise	5,100	28	41.3	− 3.2	67	1	1	8	37	0.78	− 0.40	0.40	7.5	4	21	0	10	se.	Do.
Fort Mohave	Mohave	604	40	44.0	− 7.0	69	26†	19	7	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	August F. Duclos.
Gilabend	Maricopa	737	22	49.8	− 3.9	76	28	11	7	41	0.28	− 0.46	0.28	0	1	26	0	5	.....	Agent Southern Pacific Ry.
Globe	Gila	3,625	12	40.2	− 5.5	68	26	10	7	37	0.58	− 0.87	0.26	3.0	3	16	13	2	nw.	Dr. B. G. Fox.
Grand Canyon	Coconino	6,866	10	20.0	− 8.8	45	29†	− 19	11	35	1.05	− 0.47	0.80	10.5	3	20	8	3	sw.	Agent Grand Canyon R. R.
Grand Canyon (1)	....do	3,676	5	33.9	.....	56	29	8	7	29	0.74	.....	0.54	5.4	3	18	10	3	n.	B. W. Zachau.
Granite Reef Dam	Maricopa	1,372	18	48.0	− 5.1	71	27	13	6	37	0.69	− 0.29	0.25	0	3	17	8	6	w.	U. S. Reclamation Service.
Greer	Apache	9,200	8	.....	.....	.....	.....	.....	.....	.....	0.86	.....	0.73	.....	2	.....	.....	.....	.....	U. S. Forest Service.
Hereford	Cochise	4,180	4	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.05	0.5	2	.....	.....	.....	.....	Agent, E. P. & S. W. R. R.
Holbrook	Navajo	5,069	23	29.6	− 3.3	62	18	− 6	7	44	0.12	− 0.63	0.10	2.7	2	31	0	0	sw.	Thorwald Larson.
Indian Oasis	Pima	3,000	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Joseph Menager.
Intake	Gila	2,230	6	.....	.....	.....	.....	.....	.....	.....	0.30	.....	0.20	1.0	2	27	2	2	e.	U. S. Reclamation Service.
Jerome	Yavapai	4,743	16	38.2	− 4.6	64	26	7	7	30	0.70	− 1.19	0.60	8.0	2	20	9	2	w.	Dr. L. A. Hawkins.
Keams Canyon	Navajo	6,600	7	26.0	.....	51	25	− 24	7	40	0.60	.....	0.30	6.0	3	22	8	1	w.	Fred. A. Bartram.
Kingman	Mohave	3,326	11	40.2	− 4.3	67	30	8	7	43	0.70	− 0.65	0.60	6.0	2	25	0	6	s.	Agent, A. T. & S. F. Ry.

TABLE 1.—*Climatological data for January, 1913. District No. 9*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Arizona—Continued.																				
Lakeside	Navajo	6,500	15	26.6	.....	60	3	− 12	6	58	0.68	− 1.13	0.30	8.5	3	20	4	7	sw.	Prof. Joseph Peterson.
Lewis Springs	Cochise	4,029	4	.....	.....	.....	.....	.....	.....	.....	0.23	.....	0.19	0.1	3	21	2	8	.....	Agent, E. P. & S. W. R. R.
Lowell Observatory	Coconino	7,180	1	.....	.....	.....	.....	.....	.....	.....	1.46	.....	1.17	14.6	3	.....	.....	.....	.....	Vesto M. Slipher.
McNeal	Cochise	4,150	3	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.04	1.0	3	13	8	10	n.	Gladys Taylor.
Maricopa	Pinal	1,186	36	44.6	− 7.1	74	4	8	7	49	0.60	− 0.11	0.60	0	1	21	7	3	.....	Agent, Southern Pacific Ry.
Moccasin	Mohave	4,500	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	.....	.....	.....	.....	J. G. Maxwell.
Mohawk Summit	Yuma	538	12	.....	.....	75	4	.....	.....	.....	.....	.....	.....	.....	.....	29	1	1	.....	Agent, Southern Pacific Ry.
Naco	Cochise	4,570	4	.....	.....	.....	.....	.....	.....	.....	0.45	.....	0.40	0.5	2	25	2	4	w.	Agent, E. P. & S. W. R. R.
Natural Bridge	Gila	4,990	24	.....	.....	.....	.....	.....	.....	.....	1.40	− 1.25	0.80	10.0	3	15	12	4	sw.	D. G. Goodfellow.
Oracle	Pinal	4,500	20	41.6	− 4.6	66	3	8	7	34	2.00	− 0.01	0.60	12.5	5	17	2	12	e.	J. W. Lawson.
Osborn	Cochise	4,676	4	.....	.....	.....	.....	.....	.....	.....	1.48	.....	0.72	3.0	4	17	11	3	w.	Agent, E. P. & S. W. R. R.
Paradise	do	5,436	7	35.6	.....	62	4†	2	9	51	0.92	.....	0.40	10.0	5	17	8	6	sw.	J. C. Hancock.
Parker	Yuma	345	16	45.7	− 5.1	79	25†	11	7	53	0.15	− 0.71	0.15	0	1	28	3	0	sw.	M. A. Isreal, M. D.
Payson	Gila	5,550	4	35.9	.....	77	3	− 18	12	72	0.77	.....	0.50	9.0	3	19	0	12	.....	Mart McDonald.
Phoenix	Maricopa	1,108	18	47.2	− 2.8	71	29	16	7	35	0.38	− 0.79	0.26	0	2	18	5	8	w.	U. S. Weather Bureau.
Phoenix (1)	do	1,092	21	45.8	− 4.9	72	27†	11	7	42[a]	0.41	− 0.49	0.18	0	3	20	7	4	w.	Geo. Acuff.
Phoenix (2)	do	1,189	4	47.2	.....	74	27†	14	6	39	0.43	.....	0.16	0	2	20	6	5	sw.	Salt River Valley Nurseries.
Pinal Ranch	Pinal	4,520	18	.....	.....	.....	.....	.....	.....	.....	1.14	− 2.20	0.50	9.0	3	.....	.....	.....	.....	Irion & Craig.
Pinto	Apache	5,660	8	.....	.....	.....	.....	.....	.....	.....	0.60	.....	0.40	6.0	2	22	3	6	sw.	Celia F. Henning.
Prescott	Yavapai	5,320	48	30.4	− 4.8	64	3	− 7	7†	46	0.37	− 1.23	0.30	3.7	2	25	5	1	.....	Dr. J. W. Flinn.
Prescott Dry Farm	do	.....	...	33.6	.....	64	3	1	7†	46	0.05	.....	0.05	4.0	1	20	0	11	s.	L. L. Bates.
Quartzsite	Yuma	800	4	44.9	.....	75	4	9	7	46	0.44	.....	0.44	0	1	19	11	1	nw.	W. E. Scott.
Redrock	Pinal	1,864	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. B. Lee.
Rice	Gila	2,665	30	40.4	− 2.9	70	26	9	8	50	0.91	− 0.45	0.55	4.0	4	22	1	8	e.	Arthur Pritchard.
Roosevelt	do	2,175	6	44.4	.....	67	27	20	6†	32[c]	1.19	.....	0.57	0	3	17	11	3	s.	U. S. Reclamation Service.
Sacaton	Pinal	1,280	5	45.8	.....	73	27†	9	6	43	0.72	.....	0.47	0	2	.....	.....	.....	.....	E. W. Hudson.
St. Johns	Apache	5,650	8	25.6[a]	.....	.....	.....	− 21	8	56[a]	0.50	.....	0.27	7.0	2	.....	.....	.....	sw.	Alexander Shreeve.
St. Michaels	do	6,950	25	24.4	− 1.7	53	3†	− 21	7	47	0.08	− 0.86	0.06	1.3	2	21	9	1	sw.	Rev. Anselm Weber, O. F. M.
Salome	Yuma	1,875	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. B. Swartz.
San Simon	Cochise	3,609	29	43.1	− 1.5	70	17†	− 5	6	49	0.20	− 0.24	0.20	2.0	1	16	6	9	se.	Agent, Southern Pacific Ry.
Seligman	Yavapai	5,219	7	31.0	.....	65	3	− 15	11	50	0.25	.....	0.25	6.0	1	25	0	6	n.	Librarian, A. T. & S. F. Ry.
Sentinel	Maricopa	685	14	52.8	− 2.1	74	1†	18	7	44	0.30	− 0.04	0.30	0	1	28	2	1	se.	Agent, Southern Pacific Ry.
Silverbell	Pima	2,650	7	47.9	.....	72	28	19	7	28	0.80	.....	0.40	4.5	2	24	0	7	n.	Imperial Copper Co.
Snowflake	Navajo	5,644	6	30.2	.....	60	3†	− 8	6†	51	0.10	.....	0.10	1.0	1	15	4	12	n.	William J. Flake.
Springerville	Apache	6,862	2	28.5	.....	58	18	− 14	7	46	0.32	.....	0.26	2.4	2	21	5	5	sw.	U. S. Forest Service.
Supai	Coconino	3,200	4	38.2	.....	61	30†	11	7	30	0.44	.....	0.24	2.0	2	24	1	6	.....	Laura B. Symons.
Tempe	Maricopa	1,165	9	44.9	.....	70	27†	12	7	38	0.73	.....	0.28	0	3	20	8	3	ne.	F. H. Simmons.
Thatcher	Graham	2,800	10	41.6	− 3.3	70	3	9	7	51	0.53	− 0.18	0.26	2.0	4	20	9	2	.....	J. H. Larson.
Tombstone	Cochise	4,550	14	43.3	− 4.3	68	4†	9	6	37	0.60	− 0.25	0.25	5.0	3	21	7	3	e.	F. N. Walcott.
Truxton	Mohave	3,997	3	36.6	.....	64	29	0	6	38	0.60	.....	0.58	6.0	2	16	11	4	nw.	Truxton Canyon Indian Sch.
Tuba	Coconino	4,500	15	25.1	− 8.2	49	30†	− 15	7	33	0.34	− 0.28	.....	5.0	6	19	7	5	n.	Ira E. Bell.
Tucson	Pima	2,390	31	44.8	− 5.1	72	14	6	7	46	0.80	0.00	0.35	2.0	3	13	10	8	nw.	University of Arizona.
Tucson (1)	do	2,380	5	43.3	.....	72	3†	0	7	52	0.61	.....	0.35	0.8	4	22	7	2	nw.	Rev. James F. Record.
Tucson (2)	do	2,526	3	44.7	.....	72	14	6	7	47[a]	0.79	.....	0.48	0.5	4	22	4	5	w.	U. S. Coast & Geod. Survey.
Vail	do	3,421	14	41.3[f]	.....	76	4	0	6†	50[f]	0.55	− 0.06	0.55	5.5	1	21	0	10	.....	Agent, Southern Pacific Co.
Walnut Grove	Yavapai	.....	...	.....	.....	.....	.....	.....	.....	.....	0.50	− 0.82	0.50	6.0	1	.....	.....	.....	.....	J. O. Carter.
Wickenburg	Maricopa	2,072	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent, S. F. P. & P. Ry.
Willcox	Cochise	4,164	31	36.7	− 5.5	70	25	2	7	48	.....	.....	.....	.....	.....	18	0	13	s.	Agent, Southern Pacific Ry.
Williams	Coconino	6,750	10	29.0	− 4.0	70	2†	− 18	7	55	1.90	− 0.34	1.40	19.0	3	23	8	0	.....	E. J. Nordyke.
Winslow	Navajo	4,853	8	28.9	.....	60	31	− 5	7	51[b]	0.00	.....	0.00	0	0	.....	.....	.....	.....	Winslow High Schools.
Yuma	Yuma	141	32	50.2	− 4.5	78	29	24	6	38	0.12	− 0.31	0.10	0	2	29	1	1	n.	U. S. Weather Bureau.
Yuma (1)	do	150	6	47.1	.....	78	29	16	8	46	0.19	.....	0.16	0	2	28	2	1	n.	C. J. Wood.
Nevada.																				
Caliente	Lincoln	4,407	3	29.8	.....	61	4†	− 9	7	49	0.04	.....	0.04	1.0	1	22	8	1	ne.	Salt Lake Route.
Las Vegas	Clark	2,033	11	39.8	− 1.6	71	26	8	7	38	0.12	− 0.35	0.12	0	1	22	8	1	s.	Chas. P. Squires.
Logan	do	1,355	6	39.0	.....	71[d]	26	6	7	44[d]	0.01	.....	0.01	0	1	25	5	1	n.	O. W. Jarvis.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 9, Colorado Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Battle Mountain	Snake																														.20	0.20
Big Piney	Green																															
Daniel	do	T.	T.	T.					.16	.16			.16	T.		T.	T.	.16	.32	.16		T.	T.						T.		T.	1.12
Eden	do																T.														T.
Green River	do	.10					T.										T.	T.		T.											T.	0.10
Pinedale	do				.03				.02	.10	T.		.06	.02			.03	.01	.09	.08						T.						0.44
Wamsutter	do					.05	.05											.01												.08	.08	0.27
Willow Creek Cabin	do	.06		.36	.09				.16	.35			.07																			1.09
Colorado.																																
Breckinridge	Grand	.24	.05	T.	.16	T.					T.	T.	T.	T.			.05	.30			.15									T.	.05	1.00
Buford	White																															
Cascade	San Juan	.15											.70			.03		1.11														1.99
Cedaredge	Gunnison	T.			.35	.31												.15														0.81
Cochetopa	do	.25			T.	.14								T.		T.	T.	.22														0.61
Collbran	Grand	.07			.29	.35	.02				.33	.07					.05	.01			.01			.01							T.	1.21
Columbine	Yampa	.01					.03										.05				.02								.03			0.14
Columbine Ranch	Gunnison	.31	.57			T.					.64						.38						T.								T.	1.90
Corona [1]	Grand	1.10	.40	.10		.30					T.	.10	T.					.30	.30		.40			T.	.15	.15	.18				T.	.18	3.66
Cortez	San Juan																															
Craig	Yampa																															
Crawford (near)	Gunnison	.03				.36					.28						.04	.10			.27			.05								1.13
Crested Butte	do	.92	T.		.40	.60					.29		.10			T.	.35	.90		.26												3.73
Delta	do				.30	.30					.02	T.	.04				T.							.05								0.71
Durango	San Juan	.01				.05	T.				.40						.10	.21						.01								0.78
Eureka	do	.17	.10	T.							.17	.10	T.	T.				.68	.40	T.				T.	.10							1.72
Fraser [1]	Grand	.25	T.	.15	.10							T.		T.				.15	.05												.05	.15	0.90
Fruita	do				.18	.10						.20					.05	.04						.13								0.70
Glade Park	do	.04			.50						.20					.12	.12							.08								1.06
Gladstone	San Juan	.54	.16	T.	T.	T.	T.				.53	.09	.10				.49	1.01						.07	T.						.02	3.01
Glen'd Spr'gs (near)	Grand	.04				.20					.11						T.	.12		T.												0.47
Grand Junction	do	.01			.26	.08					.09	T.					.03	.02		T.			.01	.12							T.	0.62
Grandlake	do	T.			.40										T.	T.	.60	T.	T.	T.											.55	1.55
Grand Valley	do	.33			.06						.09						.04	.03		.01				.06								0.62
Gunnison	Gunnison	.04			.10	.10					T.			T.		.05		.05						.01								0.35
Hesperus (near)	La Plata	T.				.07	T.				.12	.02					T.	.09						T.								0.30
Horsefly	Gunnison	.16			T.	.08					.16							.14		T.				.10								0.64
Ironton	do	.58			.09	.11					.15		T.				.20	.30					T.							T.	T.	1.43
Lake City	do	.31			T.	.02					.02		.02				.04	.04														0.45
Lay	Yampa	.13			T.	.05					T.						.13	.13		.27					T.					T.	.07	0.78
Mancos	San Juan					.20	.06				.13	.30					T.	.18						.08								0.95
Marble	Grand	.25			.20	.15					.22						.22	.36		.05												1.45
Marshall Pass	Gunnison	.78				.32	.21					.07					.18					.17										.18	1.91
Meeker (near)	White	.15		.05		T.					.05	T.					.08			.30				.15							T.	0.78
Montrose	Montrose	.01			.02	.37	.03				.05	.02					T.	.05						.05								0.60
Nast	Grand	.15	.12		.15						.05		T.				.30	.28		.05											T.	T.	1.10
Pagosa Springs	San Juan					.11	T.	.05			.05	.09					.11	.30														0.71
Palisades	Grand	T.			.01	.01					.02	T.					T.	T.						.02								0.06
Paonia	Gunnison	.25			.30	.35					.25	.07	T.				T.	.10						.05								1.37
Pitkin	do																															
Pyramid	Yampa																															
Rangely	White																															
Redcliff	Grand	.74	.18								.10	T.	T.	.30	.21	.10	.20	.50	.28	.26	.18	T.							.10	.30		3.45
Redvale	San Miguel	.10				.28						.09						.10						.28								0.85
Rico	Dolores																															
Rifle	Grand	T.			.07	.37					.08						T.	.06		T.				.01							T.	0.59
River Portal	Gunnison	.04			.09	.18	T.				.11							.10			.08			.14								0.74
Sapinero (near)	do	.22			.17	.15					.16	.07	.07				.06	.30			.13			.12							T.	1.45
Shoshone	Grand	.05			.06	.11	.03				.04	.02					.02	.30		.01											.01	0.65
Silverton (near)	San Juan	.06	T.		T.	.06					.36	T.	.10	T.		T.	.36	1.90						T.								2.84
Spruce Lodge	Grand	.29	.08	T.	.15						.13	.08		T.			.10	.11		T.				T.	T.	T.	.09				.06	.20	1.29
Steamboat Springs	Yampa																															
Tacoma	San Juan	T.				.05					.25	T.					.10	.35														0.75
Telluride	San Miguel	.74	T.			.20	T.				.14	.22	.15				.61	.38		T.	.13			.14							T.	2.71
Terminal Dam	San Juan					.16					.46	.07					.19	.49														1.37
Yampa (near)	Yampa	.20			.39	.07					.23						.05	.07		.17				T.							.12	.36	1.75
Utah.																																
Aneth	San Juan					.22					.03																					0.25
Bluff	do				.35					.08																						0.43
Boneta	Green	.20									.02	.20			.02			.20														0.64
Canaan	Colorado																															
Castle Dale	Green															.30		.10														0.40
Cisco	Grand				.20	T.					.50																					0.70
Dragon	Green				T.	.18					T.						T.	.09						.06								0.33
Duchesne	do	.05			.03	.02				.03			T.				.01	.07		T.												0.21
Elkhorn	do																															
Emery	Colorado															T.		.20														0.20
Escalante	do																															
Fort Duchesne	Green				T.	T.				T.							T.	.01						T.								0.01
Fruitland	do																	.08		.06									.01			0.15
Grayson	San Juan					.50					.60						.15	.02														1.27
Green River	Green																	T.														T.
Hanksville	Colorado			.20	.12																											0.32
Hite	do				T.						.18						.13	T.														0.31
Hurricane	do																															0.00
Kanab	do										.37						.23	T.														0.60
La Sal	Grand	T.			T.						.08	T.					T.	T.						T.								0.08
Leeds (near)	Colorado										T.						T.															T.
Loa	do																															
Manila	Green					T.																		.04								0.04
Moab	Grand	T.			.21	.08					.60							T.						.05								0.94
Monticello	do					.10					1.20																					1.30
New Harmony	Colorado															.21																0.21
Orderville	do								T.	.30							.55	.18														1.03
Pine Valley	do				T.	T.	T.			.10							.90	T.					T.									1.00
Price	Green																															
Ranch	Colorado															.80	.44															1.24
San Rafael	Green					.10																										0.10
St. George	Colorado																.03															0.03

TABLE 2.—*Daily precipitation for January, 1913. District No. 9*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Utah—Continued.																																	
Scofield	Green	.07								.02			.05	T.		T.	.10	.59															0.83
Springdale	Colorado										.70																						0.70
Strawberry Tunnel (East).	Green			.20					.40	.60			.30			.40	.35	.20	.40				.20									.40	3.45
Sunnyside																																	
Teasdale	Colorado				T.	.10					T.						.10															0.20
Thompsons	Green				.07	.04					.03				T.			T.						.04									0.18
Tropic	Colorado					T.				.01						.06	.01																0.08
Troutcreek Ranger	Green																																
Vernal	do																	.30						T.								0.30
Victor	do																																
White Rocks	do				T.					.10			T.				T.	.20															0.30
Woodside	do																																0.00
New Mexico.																																	
Alma	Gila				.12		.14				.02											*	.37										0.65
Aragon	do					.30					.35												.30										0.95
Aztec	San Juan	T.				T.	T.	T.				T.					T.							.13									0.13
Berger's Ranch	Little Colo					.70					.35							T.			T.		.45	.60									2.10
Blackrock	do		T.		.12						T.	T.	.15		T.																T.		0.27
Bloomfield	San Juan	T.				.02	T.				T.						T.	T.						.08									0.10
Cambray	Mimbres						.53															.06											0.59
Cliff	Gila					.16		.10			T.	.25										T.	.22	T.									0.73
Columbus	do						.38															.20											0.58
Deming	Mimbres						.20																										0.20
Dulce	San Juan					.14		.12			.21													.14									0.61
Fort Bayard	Mimbres					.06	.07	.15			T.	.04				T.						.05	.35										0.72
Fruitland	San Juan										T.																						T.
Gage	Mimbres							.15															.25										0.40
Gila Planting Sta	do					.11	.07	.13			T.	.08										*	.60										0.99
G. O. S. Ranch	Gila				.26	.09	.16				.47	.02										.33	.01										1.34
Hachita	do					.04	.14					.08										.20	.06										0.52
Haynes	San Juan																																
Hermanes	Gila						.09	.11													14												0.34
Lordsburg	do				.15		.20					.61										.04											1.00
Luna	do					.10	.10				.30												.25										0.75
Mimbres	Mimbres						.25																.47										0.72
Pinos Altos (near)	Gila					.10	.20	.10				.21											.36										0.97
Pratt	do					T.	.14	.08				.20										.08											0.50
Putnam	San Juan																																
Redrock	Gila					.05	.08				*	.13										*	.43										0.69
Rodeo	do						.20					.25										.08											0.53
Silver City	Mimbres					.20	.10				*	.30										.10	.48										1.18
Arizona.																																	
Allaires Ranch ‖	Sonora						T.				.30											0.30											0.60
Alpine	Gila					.10	.01				.10												.08										0.29
Ash Fork	Verde					T.					.60						.10																0.70
Aztec	do										.20																						0.20
Benson	San Pedro											.30											.24										0.54
Bisbee	do											*	.17									.45											0.62
Blue	Gila			.20								.30																					0.50
Bonita	do																																
Bowie	do						T.				.25											.10											0.35
Buckeye ‖	do									.29	.11																						0.40
Canille	San Pedro						.10					.18										.25	.28										0.81
Casa Grande	Gila										.40											.20	.10										0.70
Casa Grande Ruins	do										.06	.40											.23										0.69
Chandler	Salt										T.	.15											.25										0.40
Chin Lee	L. Colorado					.10																		.05									0.15
Chlarsons Mills	Gila																																
Clifton	do					T.	T.				T.	.25										.07	.61	*									0.93
Cline	Salt																																
Cochise	Desert										*	.20																					0.20
Columbia	Agua Fria										.40							.55															0.95
Courtland	White				T.	T.	T.				.20																						0.20
Dos Cabezos	Desert					.13	.09	.09				.52											.20										1.63
Douglas	Sonora						.40					.20				T.						.32	.05								.15		1.12
Dudleyville	Gila				T.	T.					.33	.20			T.	T.	.01						.68	.01									1.23
Elgin	San Pedro				.08	.10	.10					.60										1.00											1.88
Fairbank	do						T.					T.										.10	.12										0.22
Flagstaff	L. Colorado				.02	T.				.10	.31						.27	.06															0.76
Flagstaff (1)	do					.02					.54					.26	.17																0.99
Florence ‖	Gila										.38											.25											0.63
Fort Apache ‖	Salt								.15		.02	.25									.25												0.67
Fort Huachuca ‖	San Pedro					.20	.40					.15											.03											0.78
Fort Mojave	Colorado																																
Gilabend ‖	Gila										.28																						0.28
Globe	Salt										.11	.21											.26										0.58
Grand Canyon	Colorado					T.							.80				.20	.05															1.05
Grand Canyon (1)	do						T.				.54						.15	.05															0.74
Granite Reef Dam	Salt										.25	.22											.22										0.69
Greer	L. Colorado					.13						.73																					0.86
Hereford	Gila						T.					.05										.05											0.10
Holbrook	L. Colorado				.10																	.02											0.12
Indian Oasis	Desert																																
Intake	Salt										.10											.20											0.30
Jerome	Verde					.10						.60						T.															0.70
Keams Canyon	L. Colorado					.30					.20						T.							.10									0.60
Kingman	Colorado				T.					T.	.60						.10																0.70
Lakeside	L. Colorado					.20					.30												.18										0.68
Lewis Springs	San Pedro						.01															.19	.03										0.23
Lowell Observatory	L. Colorado					.08					1.17						.21																1.46
McNeal	White					T.	T.				T.	.03										.04	.03										0.10
Maricopa ‖	Gila										.60																						0.60
Moccasin	Colorado																																
Mohawk Summit	Gila																																
Naco	San Pedro											.05										.40											0.45
Natural Bridge	Verde										.80	.10					.50																1.40

TABLE 2.—*Daily precipitation for January, 1913. District No. 9*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***Arizona*—Contd.**																																	
Oracle	San Pedro					.05					.60	.60										.20	.55									2.00
Osborn	do						.20					.10											.46	.72								1.48
Paradise	Desert				*	*	.40					*	.22										.30									0.92
Parker	Colorado									.15																						0.15
Payson	Verde										.50							.22				.05										0.77
Phoenix	Salt										.26											T.	.12									0.38
Phoenix (1)	do										.18	.09											.14									0.41
Phoenix (2)	do										.27												.16									0.43
Pinal Ranch ‖	Gila											.50										.28	.36									1.14
Pinto	L. Colorado					.20																	.40									0.60
Prescott	Hassayampa						T.	T.			.30						.07															0.37
Prescott Dry Farm	Verde										.05																					0.05
Quartzite	Colorado										.44																					0.44
Redrock	Santa Cruz																															
Rice	Gila										.06	.25											.55	.05								0.91
Roosevelt	Salt										.57												.55	.07								1.19
Sacaton	Gila										.47												.25									0.72
St. Johns	L. Colorado					.27																.23										0.50
St. Michaels	do					T.	T.	.06			.02													T.								0.08
Salome	Colorado																															
San Simon	Gila				.20						T.																					0.20
Seligman	Verde										.25																					0.25
Sentinel	Gila										.30																					0.30
Silverbell	Santa Cruz										.40		.40																			0.80
Snowflake	L. Colorado					T.					T.	T.						T.					.10									0.10
Springerville	do							.06				.26																				0.32
Supai	Colorado										.20						.24															0.44
Tempe	Salt										.18	.28											.27									0.73
Thatcher	Gila										.15	.10										.02	.26									0.53
Tombstone	San Pedro					.15					.20											.25										0.60
Truxton Canyon	Colorado				.02						.58																					0.60
Tuba	L. Colorado				*	*					*	.31					.02		.01													0.34
Tucson	Santa Cruz										.22	.23											.35									0.80
Tucson (1)	do										.08	.16										.02	.35									0.61
Tucson (2)	do										.17	.12	T.									.02	.48			T.						0.79
Vail	do										.55																					0.55
Walnut Grove	Hassayampa										.50																					0.50
Wickenburg	do																															
Willcox	Desert																															
Williams	Colorado				.20						1.40						.30															1.90
Winslow	L. Colorado																															0.00
Yuma	Colorado									.02	.10																					0.12
Yuma (1)	do										.03	.16																				0.19
Nevada.																																
Caliente	Colorado																.04															0.04
Las Vegas	do									T.	T.					.12																0.12
Logan	do																.01															0.01

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 9, Colorado Valley.*

Date.	Wyoming.				Colorado.										Utah.										New Mexico.			
	Daniel.		Green River.		Durango.		Grand Junction.		Gunnison.		Meeker.		Steamboat Springs.		Emery.		Hite.		Moab.		St. Gerorge.§§		Vernal.		Bloomfield.		Fort Bayard.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	27	5	27	− 1	35	12	32	12	28	14	25	− 8	24	12	43	2	47	27	40	20	57	16	31	12	41	3	52	32
2....	27	− 8	32	3	35	3	30	10	20	− 23	29	− 19	17	−12	46	− 1	43	20	34	9	52	17	31	0	33	4	52	22
3....	34	15	43	15	41	5	31	6	24	− 18	35	10	32	− 2	45	− 3	45	19	36	8	54	17	40	2	40	4	64	26
4....	27	− 8	29	1	43	12	26	10	32	0	42	− 2	37	−12	42	−10	42	28	37	13	41	19	38	10	51	12	56	28
5....	3	− 31	11	− 8	28	− 7	16	2	20	0	35	− 3	13	1	45	− 9	35	18	36	13	32	21	15	0	27	− 2	47	20
6....	− 7	− 44	3	− 26	17	− 11	11	− 12	22	− 34	2	− 39	4	−42	43	−11	21	9	15	−12	28	8	7	−19	18	− 9	24	16
7....	7	− 20	14	− 18	10	− 13	2	− 19	− 4	− 43	− 1	− 43	− 10	−54	30	−10	23	3	13	−18	32	3	7	−20	16	−16	31	− 12
8....	15	− 4	33	− 9	25	− 10	11	− 18	− 4	− 33	15	− 16	29	−17	31	−11	21	7	16	−10	43	6	16	−13	25	−14	38	− 5
9....	22	7	36	7	42	6	15	− 8	12	− 28	31	− 15	31	−13	35	0	25	8	20	− 6	42	24	23	− 4	46	8	47	4
10....	17	− 22	28	6	28	16	14	2	20	− 21	29	14	27	− 1	25	2	23	16	24	4	40	26	20	2	35	7	40	19
11....	15	− 17	21	0	27	− 2	18	− 3	20	− 21	28	− 9	25	2	21	1	23	1	18	−14	39	14	21	− 3	32	3	36	22
12....	20	− 5	32	5	30	− 2	25	− 1	3	− 21	32	11	23	4	20	2	30	6	25	− 5	44	17	30	1	38	3	41	11
13....	27	4	43	7	41	2	22	− 9	22	− 18	43	1	29	− 8	23	5	30	6	24	− 7	42	12	29	4	44	4	50	21
14....	31	5	41	11	45	19	23	6	25	− 6	45	20	41	2	30	10	29	8	28	10	53	20	31	11	53	26	53	25
15....	32	6	44	10	41	17	41	2	30	− 9	44	20	48	22	40	11	39	10	31	1	59	18	42	7	50	23	56	28
16....	28	4	34	22	37	13	44	27	26	− 2	39	24	31	12	41	13	47	19	44	9	49	30	39	16	43	19	48	37
17....	27	− 1	35	13	37	14	39	20	28	15	30	20	28	12	40	16	53	37	44	33	58	38	33	8	47	17	50	29
18....	26	− 12	43	23	39	12	34	19	20	− 3	40	9	29	− 3	35	12	49	32	47	24	49	26	27	6	44	14	58	29
19....	22	− 9	20	8	40	14	44	16	32	8	35	14	31	12	30	9	53	31	49	25	55	26	39	9	49	22	55	32
20....	5	− 35	21	− 5	30	4	28	1	23	− 12	16	− 28	14	−25	31	− 5	43	24	39	15	46	22	24	− 9	35	2	50	28
21....	18	− 5	27	− 4	37	1	26	− 2	11	− 28	25	− 21	25	−26	30	− 4	41	16	31	9	52	13	27	− 6	43	− 2	41	20
22....	26	5	32	11	41	11	26	− 3	13	− 26	28	− 14	31	−19	28	− 4	41	17	32	7	42	15	25	− 6	44	5	37	28
23....	20	− 12	33	21	35	17	32	7	19	− 16	28	12	32	5	39	6	48	23	35	19	52	17	28	10	37	13	45	22
24....	27	− 1	42	2	34	5	31	− 5	15	− 22	31	− 10	26	− 8	40	5	45	20	36	11	53	15	31	1	37	2	50	19
25....	28	2	38	14	42	9	32	4	27	− 14	39	2	46	19	45	11	48	22	38	12	52	18	38	4	43	8	51	24
26....	35	1	41	10	47	9	39	2	26	− 18	36	− 2	39	8	42	16	55	23	39	13	65	20	43	6	49	8	58	29
27....	33	4	46	10	42	10	36	9	21	− 23	33	− 9	33	−17	46	14	49	21	40	12	60	22	39	6	44	9	52	23
28....	30	6	43	6	45	8	38	1	27	− 24	35	3	36	14	42	15	48	21	40	12	58	18	41	6	48	7	53	25
29....	35	− 12	34	9	48	13	32	1	25	− 22	43	− 5	34	−14	40	12	48	21	43	11	59	20	39	5	50	9	55	26
30....	26	− 8	35	15	45	16	46	18	36	− 7	45	15	33	6	43	18	57	24	46	18	62	20	44	12	53	13	54	26
31....	27	− 4	31	11	43	10	35	11	35	− 8	31	− 1	30	16	45	19	53	24	49	17	62	21	39	13	47	14	56	25
Mns..	23.4	−8.3	32.0	5.5	36.5	6.9	28.4	3.4	21.1	−14.9	31.2	−2.2	28.0	−4.1	6.6	4.2	0.5	18.1	33.8	8.2	49.4	18.7	30.2	2.3	40.7	7.0	48.4	21.9

Date.	Arizona.																					
	Bisbee.		Flagstaff.		Fort Apache.§§		Grand Canyon.		Parker.		Phoenix.		Prescott.		St. Michaels.		Tucson.		Yuma.		Logan, Nev.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	59	37	43	24	66	15	34	22	72	35	65	32	52	21	42	8	67	28	69	40	59	17
2	55	33	44	19	70	18	30	20	67	26	65	36	51	14	45	5	63	25	69	51	61	22
3	64	36	59	14	60	12	36	18	74	25	67	32	64	18	53	9	71	25	73	40	58	22
4	59	44	40	10	64	15	30	20	64	21	64	34	51	30	45	12	70	28	71	33	.....	17
5	52	32	13	−7	54	10	20	10	62	16	42	27	33	7	35	8	42	27	45	25	.....	28
6	35	19	11	−13	50	−2	20	0	42	16	59	17	22	−4	15	−12	36	19	38	24	.....	16
7	24	9	17	−17	46	−4	20	−5	45	11	41	16	27	−7	19	−21	39	6	42	26	.....	6
8	38	8	32	−2	32	−5	18	−8	51	16	52	19	42	1	30	−15	54	13	52	26	46	9
9	52	20	31	6	34	−4	20	−10	55	25	59	32	42	13	42	−5	65	28	58	26	47	16
10	45	34	22	2	54	2	18	−16	53	20	52	37	32	21	32	−2	43	31	51	29	45	17
11	39	22	25	−23	40	8	14	−19	52	20	49	32	31	−7	28	−3	45	27	54	26	40	17
12	49	21	41	−8	48	−4	28	−5	56	20	53	27	38	−5	39	−3	54	21	56	29	44	13
13	55	29	47	−1	44	−3	42	10	58	22	64	32	50	5	46	3	67	26	61	39	47	18
14	63	29	38	14	42	7	28	16	62	28	64	36	51	17	49	16	72	38	64	35	52	18
15	61	42	36	10	52	20	26	20	63	30	57	40	47	25	44	21	66	34	58	33	60	19
16	54	46	31	25	54	22	38	24	66	37	63	41	41	30	40	33	63	41	67	44	57	19
17	60	29	38	10	58	30	40	25	66	31	61	41	49	33	41	28	62	27	66	38	60	33
18	63	28	42	10	60	20	44	18	67	33	64	34	53	18	48	12	70	29	68	36	56	29
19	60	28	38	11	58	18	40	11	67	33	61	39	49	27	44	20	64	37	70	42	59	31
20	55	40	21	−2	52	22	23	1	59	18	61	32	39	18	38	12	61	31	61	43	51	28
21	46	34	32	−11	60	12	30	0	60	21	60	33	46	7	42	−3	56	31	62	36	53	19
22	43	33	35	5	.....	14	32	0	78	25	54	45	43	15	40	12	55	40	63	29	46	18
23	50	29	30	10	.....	28	32	−1	78	30	59	43	42	21	37	17	57	32	63	36	57	23
24	50	31	36	12	.....	20	33	11	78	28	65	35	47	12	41	6	61	30	68	41	59	30
25	55	30	46	15	.....	20	42	10	79	28	69	35	54	17	43	11	65	31	72	41	67	22
26	58	35	42	16	.....	19	37	10	78	28	69	35	56	19	49	13	66	30	77	40	71	30
27	52	30	46	8	.....	16	38	11	78	29	70	40	53	15	51	6	70	30	75	44	65	27
28	55	34	42	8	.....	19	40	12	78	29	71	40	55	17	53	9	69	35	76	48	67	27
29	62	32	46	18	.....	20	45	10	78	29	71	40	55	26	50	11	70	34	78	44	66	27
30	59	41	44	20	.....	19	42	11	79	30	70	37	53	21	44	19	66	33	78	41	69	25
31	61	35	47	16	.....	18	45	10	79	31	70	37	56	20	42	14	68	31	75	45	68	29
Means	52.7	30.6	36.0	6.4	52.3[1]	13.0	32.4	7.6	65.9	25.5	60.4	34.1	45.9	15.0	40.9	7.8	60.5	29.0	63.9	36.5	56.7[4]	21.4

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 10, GREAT BASIN.

ALFRED H. THIESSEN, District Editor.

GENERAL SUMMARY.

The month of January, 1913, is almost without parallel in respect to the general severity of the weather throughout the Great Basin. It was much colder than January of last year. In the Utah area the temperatures averaged lower than for any January since 1898; while in the Nevada area a lower average temperature has occurred only three times since 1890. The coldest weather occurred from the 4th to the 10th and from the 18th to nearly the close of the month. At the beginning of the first cold period a storm of considerable energy lay central over the southeastern corner of Colorado, while a strong high pressure area prevailed over the northwest. Under the influence of this barometric condition high winds prevailed, doing some damage, and temperatures much below normal were recorded all over the Great Basin, but particularly in the eastern portion. During the second cold period weather conditions were not so severe as in the first, but many stations recorded temperatures of zero or below.

Although the number of rainy days was about normal, the precipitation averaged below normal, and was light everywhere except in the extreme west-central portion of the district. In the Utah area most of the roads remained open during the entire month, and there was generally good range for cattle and sheep.

The average number of rainy days was 5; clear days, 13; partly cloudy days, 7; and cloudy days, 11.

TEMPERATURE.

The temperature for the district averaged 23.1°, which is 4.2° below normal, and 6.4° below the average for January of last year. The highest local monthly means occurred in the sheltered valleys of the Utah areas and in the southern portion of both the Utah and the Nevada areas; and the lowest in the Wyoming and Idaho areas. The local monthly mean temperatures ranged from 11.2° at Paris, Idaho, to 34.0° at Jean, Nev. Every station but one, with a record of 10 years or more, showed monthly means below their January normals, the greatest minus departure being 9.4° at Thistle, Utah. The month began warm, but cold weather soon set in culminating in extremely low temperatures on the 5th, 6th, and 7th. At many places in the Utah area records for low temperature were broken. At McGill, Nev., the cold weather hindered open-pit mining, as the ore was frozen and shovels could not be used; and a correspondent at McDermitt reported that all valley quails were killed and that there was no winter pasture, necessitating the feeding of stock. The minimum temperatures in the respective States or parts of States were: −32° on the 6th at Border, Wyo.; −26° on the 6th at Weston, Idaho; −38° on the 6th at Woodruff, Utah; −21° on the 6th at Cliff, Oreg.; −8° on the 5th at Tahoe, Cal.; and −29° on the 6th at Tecoma, Nev. The highest temperatures reported were: 46° on the 25th at Cokeville, Wyo.; 43° on the 15th at Weston, Idaho; 64° on the 3d at Ibex, Utah; 48° on the 31st at Burns, Oreg.; 53° on the 3d at Cathedral Park, Cal.; and 69° on the 31st at Jean, Nev.

PRECIPITATION.

The precipitation for the district averaged 1.26 inches, which is 0.59 inch below normal. The greatest amounts fell in the Utah area, and in the extreme west-central portion of the district. In the Oregon area and at a few stations in Nevada amounts above normal occurred, but in the greater portion of the district deficient amounts fell. Most of the precipitation occurred in the middle decade of the month. The greatest local amount for the month was 9.04 inches at McKinney, Cal.; and none was reported at Lemay, Utah. The greatest 24-hour amount was 2.69 inches at McKinney, Cal., on the 15th.

SNOWFALL.

In the Great Salt Lake and Sevier Lake watersheds the snow layer ranged from 108 to 4 inches, averaging somewhat less than last year and much less than normal. Many correspondents reported, however, that the snow was well drifted and packed, and therefore in a condition for late keeping.

In the Nevada area the snowfall was deficient in all drainage basins except the Humboldt, and the amounts ranged from 9.8 inches at Winnemucca, Nev., to 188.5 inches at McKinney, Cal.

TABLE 1.—*Climatological data for January, 1913. District No. 10, Great Basin.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Wyoming.																				
Border	Lincoln	6,085	11	11.8	− 1.6	42	25	− 32	6	42	0.33	− 0.91	0.08	4.4	7	12	4	15	w.	S. W. Condron.
Cokeville	do	6,204	3	13.2	.....	46	25	− 32	6	45	0.50	.....	0.13	9.5	7	16	4	11	w.	E. J. Tuckett.
Evanston	Uinta	6,860	17	16.4	− 4.1	42	28	− 28	6	42	0.62	− 0.62	0.22	5.0	4	12	13	6	sw.	Frank Tucker.
Idaho.																				
Geneva	Bear Lake	6,171	4	.....	.....	.....	.....	.....	.....	.....	0.88	.....	0.44	10.0	3	11	15	5	.....	F. W. Boehme.
Grace	Bannock	5,400	6	21.4	.....	54	15	− 22	6	48	0.45	.....	0.15	.....	7	5	4	22	sw.	E. W. Joy.
Paris	Bear Lake	5,946	18	11.2	− 7.8	42	25	− 26	6	47	0.78	− 0.77	0.40	18.0	4	9	10	12	sw.	John Norton.
Weston	Oneida	4,460	14	20.8	− 4.1	43	15†	− 17	6	34	0.52	− 1.01	0.14	8.5	5	9	2	20	sw.	Wm. T. Chatterton.
Utah.																				
Alpine	Utah	4,900	14	.....	.....	.....	.....	.....	.....	.....	0.80	− 0.63	0.30	8.0	6	10	7	14	.....	T. F. Carlisle.
Beaver	Beaver	6, 00	9	20.2	.....	53	3	− 22	5	57	0.10	.....	0.05	1.0	2	14	15	2	n.	M. J. Shelton.
Black Rock	Millard	4,872	9	25.9	.....	60	3	− 17	7	56	0.10	.....	0.10	1.0	1	13	9	9	s.	W. D. Livingston.
Burrville	Sevier	6,800	2	19.6	.....	49	3	− 15	6†	58	0.12	.....	0.06	1.2	3	.....	.....	.....	.....	F. R. Curtis.
Castle Rock	Summit	6,244	8	.....	.....	.....	.....	.....	.....	.....	1.24	.....	0.30	25.0	11	8	7	16	sw.	David Moore.
Cedar City	Iron	5,750	8	27.4°	.....	61	3	− 18	6	41	0.53	.....	0.45	7.0	4	15	5	11	sw.	Parley Dalley.
Center	Tooele	4,250	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. C. Peterson.
Clarkston	Cache	5,930	1	.....	.....	.....	.....	.....	.....	.....	0.50	.....	0.50	8.0	1	12	9	10	.....	W. J. Griffiths.
Corinne	Boxelder	4,240	43	21.3	− 3.5	42	28	− 12	7	40	1.30	− 0.07	0.40	13.0	5	8	8	15	.....	A. C. Murphy.
Deseret	Millard	4,541	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. W. Western.
Elberta	Utah	4,650	11	22.5	.....	49	4	− 12	6†	31	0.50	.....	0.29	7.0	7	15	6	10	n.	D. C. Walkey.
Enterprise	Washington	5,750	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Day.
Erekson	Tooele	4,850	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	N. W. Erekson.
Farmington	Davis	4,267	12	27.0	− 2.4	46	15†	− 10	6	31	2.18	− 0.20	0.50	21.8	9	11	4	16	n.	Charles Boylin.
Fillmore	Millard	5,100	21	28.6	− 2.3	57	29	− 14	6	46	0.35	− 0.73	0.17	.....	6	.....	.....	.....	.....	J. J. Starley.
Garland	Boxelder	.....	...	20.4	.....	42	18	− 10	6	36	0.28	.....	0.12	6.0	3	3	18	10	s.	Heber C. Cutler.
Garrison	Millard	4,850	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. M. Smith.
Government Creek	Tooele	5,277	12	22.5	− 5.6	49	26†	− 17	6	31	0.65	− 0.60	0.31	.....	3	9	1	21	n.	Walter James.
Granger	Salt Lake	4,560	1	22.6	.....	42	3†	− 9	7	29	1.60	.....	0.40	16.0	5	.....	.....	.....	.....	Geo. E. Greene.
Grantsville	Tooele	4,220	2	.....	.....	.....	.....	.....	.....	.....	0.42	.....	0.16	8.8	4	12	15	4	sw.	J. C. Woodmansee.
Grouse Creek	Boxelder	5,148	5	.....	.....	.....	.....	.....	.....	.....	0.51	.....	0.21	11.6	7	11	3	17	.....	Philip Paskett.
Heber	Wasatch	5,593	20	17.8	− 3.7	44	3	− 30	6	49	1.20	− 1.16	0.20	23.0	8	12	8	11	n.	John Crook.
Henefer	Summit	5,301	13	18.8	− 4.2	50	3	− 28	6	51	1.37	− 1.14	0.30	14.0	8	12	4	15	e-w-nw	William Brewer.
Hooper	Weber	4,436	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. Jones, jr.
Ibapah (near)	Tooele	7,500	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Lawton.
Ibex	Millard	5,250	2	30.6	.....	64	3	− 6	7	45	0.08	.....	0.04	2.0	2	16	4	11	s.	J. Watson.
Iosepa	Tooele	4,356	2	27.8	.....	59	26	− 3	7	45	0.88	.....	0.22	.....	7	9	3	19	s.	K. Hubbell.
Joy	Juab	5,000	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. Laird.
Junction	Piute	6,000	1	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	T.	0	13	16	2	s.	Joseph Jensen.
Kanosh	Millard	5,250	6	.....	.....	.....	.....	.....	.....	.....	0.92	.....	0.52	.....	3	.....	.....	.....	.....	Geo. Crane.
Kelton	Boxelder	4,230	33	20.6	− 2.3	45	8	0	8†	45	0.45	− 0.22	0.30	4.5	3	19	6	6	sw.	F. W. Klock.
Lemay	do	4,221	2	24.8	.....	39	1	10	7†	26	0.00	.....	0.00	0	0	17	0	14	.....	Agent S. P. Co.
Levan	Juab	5,010	23	21.2	− 3.1	44	15	− 15	6†	33	1.08	− 0.38	0.32	10.8	6	18	1	12	sw.	William Brown.
Logan	Cache	4,507	22	22.4	− 1.8	45	13†	− 10	7	37	0.69	− 0.86	0.25	9.0	7	.....	.....	.....	.....	Utah Experiment Station.
Low	Tooele	4,602	...	30.8	.....	60	4	− 3	6	45	0.20	.....	0.10	2.0	2	11	6	14	.....	Agent W. P. Ry. Co.
Lucin	Boxelder	4,504	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. C. Herrington.
Lund	Iron	5,086	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Job F. Hall.
Manti	Sanpete	5,575	18	21.0	− 4.5	47	15	− 22	7	40	0.55	− 0.72	0.18	4.5	5	10	5	16	.....	J. M. Anderson.
Maple Creek	Utah	4,850	...	.....	.....	.....	.....	.....	.....	.....	0.92	.....	0.27	12.9	6	9	4	18	.....	Lewis W. Gillilan.
Marion	Summit	6,400	8	.....	.....	.....	.....	.....	.....	.....	1.26	.....	0.40	14.5	9	4	7	20	se.	Jas. Woolstenhulme.
Marysvale	Piute	6,076	13	22.5	− 6.0	54	3	− 16	7	56	0.37	− 0.29	0.15	4.9	6	8	16	7	n.	John W. Henry.
Meadowville	Rich	6,200	12	18.4	− 4.7	41	13†	− 20	6	41	0.50	− 1.58	0.30	5.0	2	15	2	14	.....	J. S. Moffat.
Midlake	Boxelder	4,235	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent S. P. Co.
Midvale	Salt Lake	4,365	...	24.6	.....	48	3†	− 12	5	45	0.55	.....	0.11	.....	10	5	13	13	sw.	M. J. Joy.
Milford	Beaver	4,962	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent Salt Lake Route.
Mills	Juab	.....	...	.....	.....	.....	.....	.....	.....	.....	0.12	.....	0.07	.....	2	.....	.....	.....	.....	Geo. McCune.
Millville	Cache	4,848	18	.....	.....	.....	.....	.....	.....	.....	0.85	− 0.92	0.34	.....	9	3	18	10	s.	Fred Yeates.
Minersville	Beaver	5,070	9	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	T.	0	16	4	11	n.	Geo. Roberts, sr.
Modena	Iron	5,479	12	23.9	− 3.6	60	3	− 14	3	46	0.32	− 0.41	0.18	3.8	3	22	4	5	w.	U. S. Weather Bureau.
Morgan	Morgan	5,068	8	21.0	.....	49	3	− 20	6	45	0.21	.....	0.16	.....	3	.....	.....	.....	.....	E. O. Kingston.
Moroni	Sanpete	5,919	5	22.2	.....	46	15	− 17	6†	41	0.71	.....	0.37	14.8	4	15	3	13	sw.	B. F. Eliason.
Mosida	Utah	4,510	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. B. Curtis.
Nephi (near)	Juab	5,119	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. Boswell.
Newcastle	Iron	5,150	2	.....	.....	.....	.....	.....	.....	.....	0.12	.....	0.12	.....	1	.....	.....	.....	.....	T. W. Jones.
Oak City	Millard	4,900	6	25.6	.....	55	3	− 12	6	40	0.55	.....	0.25	11.0	4	12	7	12	.....	Peter Nielson.
Ogden	Weber	4,310	42	24.2	− 4.8	46	25	− 8	6	37	1.59	− 0.03	0.50	20.5	7	12	1	18	s.	A. Van De Graff.
Panguitch	Garfield	6,560	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John N. Henrie.
Park City	Summit	7,800	8	19.8	.....	48	27	− 27	6	66	3.79	.....	2.01	.....	6	15	8	8	.....	Gertrude Evans.
Park Valley	Boxelder	5,200	2	.....	.....	.....	.....	.....	.....	.....	0.70	.....	0.60	7.0	2	9	12	10	nw.	A. O. Evans.
Parowan	Iron	5,970	22	26.8	− 2.2	59	3	− 15	7	42	0.39	− 0.65	.....	5.0	2	17	7	7	.....	Alex. Matheson.
Payson	Utah	4,637	9	.....	.....	.....	.....	.....	.....	.....	0.65	.....	0.24	8.5	5	9	17	5	ne.	D. L. Coombs.
Pelican Point	do	4,600	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B. M. Mendelhall.
Pine Cliff Ranch	Summit	8,250	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	L. E. Leavitt.
Pinto	Washington	5,907	15	21.8	− 5.6	59	3	− 15	7	49	0.31	− 1.06	0.25	.....	3	20	2	9	n.	J. H. Harrison.
Plentiful	Tooele	4,220	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. L. Drumm.
Promontory	Boxelder	4,913	34	.....	.....	.....	.....	.....	.....	.....	0.80	− 0.22	0.50	8.0	2	.....	.....	.....	.....	F. C. Houghton.
Provo	Utah	4,532	24	21.4	− 6.1	50	15	− 18	6	38	1.20	− 0.32	0.50	.....	8	6	18	7	n.	James A. Oliver.
Randolph	Rich	6,442	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Rex.
Revier	Salt Lake	5,066	2	.....	.....	.....	.....	.....	.....	.....	0.48	.....	0.25	.....	3	.....	.....	.....	.....	E. L. Terry.
Richfield	Sevier	5,350	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Joseph J. Jensen.
Richmond	Cache	4,529	...	.....	.....	.....	.....	.....	.....	.....	1.17	.....	0.32	14.4	9	6	12	13	.....	J. R. Thompson.
Saltair	Salt Lake	4,220	9	26.6	.....	49	18	− 1	7	25	0.54	.....	0.13	9.0	8	.....	.....	.....	.....	E. J. Bench.
Salt Lake City	do	4,360	39	26.9	− 1.9	49	15	− 2	7	23	0.81	− 0.54	0.29	12.3	8	5	10	16	se.	U. S. Weather Bureau.
Scipio	Millard	5,260	18	23.6	− 3.8	54	29	− 25	6†	54	0.40	− 0.96	0.22	6.0	4	14	5	12	n.	Thomas Memmott.
Showell	Boxelder	4,650	...	18.1	.....	46	14†	− 22	6	45	0.37	.....	0.16	5.7	4	11	19	1	.....	Richard Ilgner.
Silver City	Juab	6,127	3	.....	.....	.....	.....	.....	.....	.....	0.51	.....	0.30	.....	3	10	19	2	sw.	J. L. Stark.
Smyths	Beaver	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	V. Waddoups.
Soldier Summit	Utah	7,477	11	13.8	− 4.5	41	3	− 27	6	35	1.35	− 0.08	0.60	.....	3	17	7	7	w.	Geo. A. Boyd.
Spanish Fork	do	4,585	3	23.6	.....	48	3	− 16	7	43	0.80	.....	0.80	.....	1	11	6	14	.....	U. S. Rec. Service.
Strawberry Tunnel, W.	do	7,650	7	17.0	.....	46	28	− 23	7	45	2.66	.....	0.59	40.0	11	16	9	6	.....	Do.
Thistle	do	5,075	19	16.0	− 9.4	50	1	− 35	6	50	2.34	+ 0.54	0.72	39.0	9	9	15	7	w.	John Thorgierson.
Tooele	Tooele	4,900	17	25.9	− 3.9	54	3	− 9	5†	37	1.19	− 0.04	0.26	.....	7	7	3	21	s.	E. A. Bonelli.
Utah Lake Pum'g Sta.	Utah	4,500	8	17.2	.....	43	30	− 23	7	41	1.62	.....	0.36	21.5	11	7	9	15	.....	W. A. Knight.

TABLE 1.—*Climatological data for January, 1913. District No. 10*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Utah*—Continued.**																				
Vernon	Tooele	5,500	...	.....	.....	.....	.....	.....	.....	.....	0.65	.....	0.17	11.3	7	11	18	2	sw.	Glynn Bennion.
Wendover	....do	4,237	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. S. Cooper.
Whiskey Creek	Millard	4,850	2	.....	.....	.....	.....	.....	.....	.....	1.35	.....	0.45	.....	4	.....	.....	.....	.....	George Stevens.
Woodruff	Rich	6,500	11	6.9	−10.7	43	14	− 38	6	63	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. L. Eastman.
Oregon.																				
Burns	Harney	4,157	22	20.4	− 2.9	48	31	− 13	5	45	1.55	+ 0.04	0.45	11.5	6	17	8	6	.....	J. C. Welcome, jr.
Cliff	Lake	4,300	6	22.6	.....	47	29†	− 21	6	47	0.67	.....	0.15	13.0	9	6	10	15	sw.	John C. Green.
Paisley	....do	4,209	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. M. Sain.
Silver Lake	....do	4,700	16	24.6	− 3.7	47	24	− 11	6	33	1.37	+ 0.29	0.40	11.0	9	13	11	7	sw.	G. W. Marvin.
California.																				
Cathedral Park	Eldorado	6,400	0	25.4	.....	53	3	− 2	6	31	7.53	.....	1.88	125.0	12	12	4	15	s.	Carl Fluegge.
Tahoe	Placer	6,240	2	24.3	.....	50	3	− 8	5	32	7.44	.....	1.97	114.0	8	10	0	21	w.	R. M. Watson.
Truckee	Nevada	5,819	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Nevada.																				
Austin	Lander	6,594	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. O. Booe.
Battle Mountain	....do	4,843	42	23.1	− 5.1	55	28	−18	10†	50	0.27	− 0.59	0.25	.....	3	22	0	9	s.	Southern Pacific Co.
Beowawe	Eureka	4,905	42	20.6	− 5.8	56	3	−20	9†	48	0.90	+ 0.13	0.50	9.0	3	12	3	16	se.	Do.
Carlin	Elko	5,232	42	24.0	+ 0.9	58	25	−22	9	64	0.09	− 0.99	0.03	.....	7	8	13	10	.....	Do.
Carson Dam	Churchill	4,032	6	28.4	.....	64	3	− 7	6	47	0.29	.....	0.29	1.9	1	16	12	3	e.	U. S. Reclamation Service.
Cherry Creek	White Pine	6,450	5	24.1	.....	53	3	−15	7	38	0.25	.....	0.22	4.5	2	14	13	4	w.	J. H. Leishman.
Clover Valley	Elko	6,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. F. Wiseman.
Columbia	Esmeralda	5,750	6	26.6	.....	55	3	− 6	6	39	0.25	.....	0.22	4.2	3	19	6	6	nw.	A. Booth.
Dry Farm	Elko	5,600	1	24.0	.....	52	2	−15	6	37	0.60	.....	0.23	13.0	4	.....	.....	.....	.....	Walfrid Sohlman.
Elko	....do	5,432	42	20.6	− 2.1	51	3	−20	20	48	0.49	− 0.83	0.14	11.0	6	19	0	12	w.	E. J. Clark.
Eureka	Eureka	6,500	15	22.4	− 4.7	53	3	−18	5	39	0.48	− 1.39	0.18	20.0	5	12	6	13	n.	Clay Simms.
Fallon	Churchill	3,965	19	28.4	− 2.4	64	3	−10	6	53	0.25	− 0.30	0.11	1.5	4	16	7	8	ne.	U. S. Experiment Station.
Fernley	Lyon	4,200	40	30.3°	− 0.9	64°	3†	−13°	6	56°	0.60	− 0.21	0.60	6.0	1	.....	.....	.....	.....	Mrs. G. A. Steele.
Gardnerville	Douglas	4,930	22	28.1	− 3.1	63	3	− 8	6	49	1.27	− 1.20	1.00	14.0	6	22	5	4	s.	Forest Service.
Gerlach	Washoe	3,931	0	.....	.....	.....	.....	.....	.....	.....	0.06	.....	0.05	0.6	2	.....	.....	.....	nw.	Western Pacific Co.
Geyser	Lincoln	6,055	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. J. F. Wambolt.
Glenbrook	Douglas	6,240	4	27.2	.....	60	31	− 3	6	37	4.95	.....	2.00	61.5	8	13	4	14	w.	C. C. Henningsen.
Golconda	Humboldt	4,697	34	26.4	− 1.4	55	3	−12	6	47	0.70	0.00	0.40	7.0	4	10	8	13	w.	Southern Pacific Co.
Halleck	Elko	5,631	20	20.3	− 1.5	48	1†	−24	20	63	0.49	− 0.56	0.30	8.5	4	13	11	7	.....	Do.
Hawthorne	Mineral	4,569	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. B. Stannard.
Jean	Clark	2,074	5	34.0	.....	69	31	− 6	7†	53	0.30	.....	0.30	3.0	1	21	8	2	.....	Salt Lake Route.
Lahontan	Churchill	4,200	1	29.4	.....	64	3	− 2	5	45	0.22	.....	0.20	2.0	2	15	11	5	w.	U. S. Reclamation Service.
Lewers Ranch	Washoe	5,500	25	29.2	− 4.6	58	3	− 6	6	35	3.55	− 1.70	.....	34.0	5	11	14	6	.....	Ross Lewers.
Lida	Esmeralda	6,037	0	31.6	.....	62	3	− 3	6†	56	0.09	.....	0.09	0.9	1	27	2	2	nw.	L. F. Detwiler.
Lovelocks	Humboldt	3,977	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. P. Tilford.
McDermit	....do	4,700	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Scott Sterling.
McGill	White Pine	6,338	22	21.8	− 2.3	53	3	−16	6†	52	0.69	− 0.38	0.54	6.9	2	18	6	7	s.	R. E. Middagh.
Millett	Nye	6,002	5	25.4	.....	61	3	−12	6†	57	0.10	.....	0.10	1.0	1	13	7	11	s.	Fred J. Jones.
Mina	Mineral	4,600	6	29.4	.....	62	2	1	11	47	0.06	.....	0.06	0.2	1	19	0	12	.....	Southern Pacific Co.
Oasis Ranch	Esmeralda	5,106	0	25.9	.....	53	31	− 8	8	38	0.13	.....	0.11	7.0	2	25	2	4	s.	A. S. Patterson.
Potts	Nye	6,990	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Miss Mamie Potts.
Quinn River Ranch	Humboldt	4,850	11	23.9	− 4.0	49	3†	−16	6	41	0.67	− 0.69	0.20	6.5	7	16	2	13	w.	F. M. Payne.
Rebel Creek	....do	.....	1	24.2	.....	50	13	−11	23	43	1.23	.....	0.62	17.0	7	13	1	17	sw.	E. J. Hyatt.
Reno	Washoe	4,532	42	29.9	− 2.6	60	3	− 1	6	41	1.46	− 0.49	0.85	19.9	4	15	6	10	w.	U. S. Weather Bureau.
Soda Lake	Churchill	4,534	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Reclamation Service.
Tecoma	Elko	4,812	35	20.0	− 2.4	52	27	−29	6	69	0.39	− 0.25	0.25	3.9	3	8	12	11	w.	Southern Pacific Co.
Tonopah	Nye	6,090	8	26.1	.....	50	3	− 6	6	31	0.18	.....	0.18	1.2	1	19	6	6	se.	U. S. Weather Bureau.
Wabuska	Lyon	4,347	8	31.6[i]	.....	64[i]	3	1[i]	20	48[i]	.....	.....	.....	.....	.....	.....	.....	.....	ne.	J. G. Young.
Wells	Elko	5,631	41	18.4	− 4.6	42	28	−24	5	41	0.20	− 1.24	0.10	13.0	4	13	6	12	w.	Southern Pacific Co.
Winnemucca	Humboldt	4,432	34	25.2	− 3.6	56	3	−13	6	39	0.59	− 0.45	0.24	7.0	7	13	3	15	sw.	U. S. Weather Bureau.

[a], [b], [c], etc., indicate, respectfully, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 10, Great Basin.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Wyoming.																																	
Border	Bear	.10		.01	T.					.08	.02	.01	.05			T.			.08												.03	0.33
Cokeville	do									.17	T.	T.	.05	.10	.10	.07	.03						T.			.02					T.	0.50
Evanston	do	.14			T.	T.				T.	.09		.06		T.		.22		T.			T.							T.			0.51
Idaho.																																	
Geneva	Bear															.44			.26		.18											0.88
Grace	do				.15				.12	.07	.02								.05	.02			.02			T.						0.45
Paris	do								.20								.40	.10	.08													0.78
Weston	do									.10	.14		.05				.10						.13									0 52
Utah.																																	
Alpine	G. S. Lake									.10	.30			20					.05				.10								.05	0.80
Beaver	Sevier Lake	T.			T.					.05						T.							.05									0.10
Black Rock	do																.10															0.10
Burrville	do									.06										.05	.01											0.12
Castle Rock	G. S. Lake	.20			.03					.02	.10		.20	.10		.02	.30	.20		.05			T.	.02						T.		1.24
Cedar City	Desert				.45						.03						.04				.01											0.53
Center	do																															
Clarkston	G. S. Lake												.50																			0.50
Corinne	do									.10	.20		.30			.40							.30									1.30
Deseret	Sevier Lake																															
Elberta	G. S. Lake	.02			.01						.29						.03	.02		.05				.08								0.50
Enterprise	do																															
Erekson	Desert																															
Farmington	G. S. Lake				.30						.50		.20				.20	.15	T.	.10	T.		.20	.32							.21	2.18
Fillmore	Sevier Lake	T.			.17	.03				T.	.01						.01	.07		T.			T.	.06								0.35
Garland	G. S. Lake									.08					.12				.08													0.28
Garrison	Sevier Lake																															
Government Creek	do										.09						.31					T.		.25								0.65
Granger	do		.40							.40								.30	.10			.40										1.60
Grantsville	G. S. Lake				.10													.09	.07				.16									0.42
Grouse Creek	Desert	.01			T.					.10	.08		.21				.03	T.	.05	.03			T.			T.						0.51
Heber	G. S. Lake									.15	.10		.20	T.	.05	T.	.20	.20	.20	.10				T.								1.20
Henefer	do	.29		T.	T.					.10	.19		.15	.05	.10		.30	T.	T.	.19			T.	T.							T.	1.37
Hooper	do																															
Ibapah [near]	Desert																															
Ibex	do				T.						T.						.04	.04														0.08
Iosepa	do	.10			.12	.22					.05						.15	.12						.12								0.88
Joy	do																															
Junction	Sevier Lake					T.					T.						T.						T.									T.
Kanosh	do				.52	.19																		.21								0.92
Kelton	G. S. Lake								.10	.05						.30				T.						T.						0.45
Lemay	Desert																															0.00
Levan	Sevier Lake	.14			T.						.12						.32	.11		.18				.21								1.08
Logan	G. S. Lake									.04	.25	.03				.10	.01		.10				.13								.03	0.69
Low	do			T.							.10											.10										0.20
Lucin	Desert																															
Lund	do																															
Manti	Sevier Lake	.18			.16						T.						.05	.08		T.			.08									0.55
Maple Creek	G. S. Lake	T.	T.								.12		.18				.10			.27			.08	.17								0.92
Marion	do	.13			.10					T.	.08	T.	.05		T.		.20	.40	.07	.05			T.	.18							T.	1.26
Marysvale	Sevier Lake	T.			.01					.01		T.					.08	.10		.02			T.	.15								0.37
Meadowville	G. S. Lake				.20								T.				T.		.30													0.50
Midlake	do																															
Midvale	do	.02		.03	.05				.02	.10					.02	.08				.06			.11								.06	0.55
Milford	Sevier Lake																															
Millville	G. S. Lake	.02			.02				.03		.34		.12				.06	.07	.08					.11								0.85
Mills	Sevier Lake				T.	T.					.05								.07													0.12
Minersville	do				T.						T.						T.	T.						T.								T.
Modena	Desert				.18					.10							.04							T.								0.32
Morgan	G. S. Lake										.02		.16					.03														0.21
Moroni	Sevier Lake	T.				T.					T.		T.				.37	.08		.06			.20								T.	0.71
Mosida	G. S. Lake																															
Nephi (near)	do																															
Newcastle	Desert																12															0.12
Oak City	Sevier Lake		.02								.25						23							.05								0.55
Ogden	G. S. Lake			T.	.10					.50	.17		T.				30		.03				.37								.12	1.59
Panguitch	Desert																															
Park City	G. S. Lake	.48	.10									1.09		2.01	.09																.02	3.79
Park Valley	Desert												.60	.10																		0.70
Parowan	do				*	.39														T.												0.39
Payson	G. S. Lake	.05											.24				.08	.09					.19									0.65
Pelican Point	do																															
Pine Cliff Ranch	do																															
Pinto	Desert				.01		.05										.25															0.31
Plentiful	G. S. Lake																															
Promontory	do							.50									30															0.80
Provo	do	.05								.05	.05						.25	.05		.05			.20								.50	1.20
Randolph	do																															
Revier	do									.13							10														.25	0.48
Richfield	Sevier Lake																															
Richmond	G. S. Lake								.05	.20			.20	.20		.08	.09	T.	.01				.32								.02	1.17
Saltair	do	.05			.04						.05						.06	.08		.07			.06	.13								0.54
Salt Lake City	do	T.		.01	.04					.12	.18		T.				.14			.10			.16								.06	0.81
Scipio	Desert	T.									.22						.01	.10						.07									0.40
Showell	do	.07								.06			.08				.16																0.37
Silver City	do										.30							.15	.06														0.51
Soldier Summit	G. S. Lake	.40			T.								T.					.60		.35			T.								T.	1.35
Spanish Fork	do										T.								T.	.80												0.80
Strawberry Tunnel (west).	do	.30			.08					.12	.25		.59	.07			.30	.27	.08	.43				.17									2.66
Thistle	do	.72			*	.12				.12	.18		.54				.24	.18		.24													2.34
Tooele	do	.26			T.	.25					.03						.16	.16		.07			T.	.26									1.19
Utah Lake pumping station.	do	.36			.05				.14	.24	.10			.30	.10		.03			.05			.07								.18	1.62
Vernon	Desert	T.			.11	T.	T.			T.	.17		T.				.11	.09	.02	.11			T.	.04								0.65
Wendover	do																															
Whiskey Creek	do	.45			.20						.30							.40														1.35
Winder	Sevier Lake																															
Woodruff	G. S. Lake																															

TABLE 2.—*Daily precipitation for January, 1913. District No. 10*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon.																																	
Ana River	SE. drainage				.04			.06	T.		.05			.08	T.	.65	.13	.02															1.03
Bear Valley	do																																
Burns	do							.45			T.	.18	.22	.25	T.	T.				T.		.34		.11									1.55
Burns Mill	do																																
Christmas Lake	do			T.	.05			.07	T.	.09	T.			.13	.20	.05	.05	T.	.12	T.		T.	.04		T.								0.80
Cliff	do			T.	T.			.08		.08				.10	.15		.02	.02	.11				.08		.03								0.67
Diamond	do	T.						T.	.10		.20	.05			T.	T.	T.	T.	T.	T.			.20										0.55
Embody	do				.05			.03	.41			.19	.52	1.18	.19	.27	.21	.68	.45	.09		T.		T.									4.27
Fort Rock	do			T.	.03			T.	.10	.03		.03		.35	.05	.05	.03	.50															1.17
Paisley	do																																
Seneca	do																																
Silver Lake	do				.05			.10	.05					.40	.14		.14	.06	.38			.05											1.37
Valley Falls	do					.03						.17	.18		T.	T.	0	.03	.05		.08		.03										0.57
California.																																	
Bijou	Truckee								.26				.07	T.	.67	1.73	.72	.21	.40	.07													4.13
Boca	do								.60				.10		1.00	2.20	1.00	1.40					.30										6.60
Bridgeport	East Walker				.10				.35		.20					.90	.30	.20															2.05
Cathedral Park	Truckee	.60						*	.80	.21		.26		*	1.10	1.88	.97	.94	.52				.25										7.53
Deer Park	do																																
Hobart Mills	do					.02			.50	.04		T.	.30	.03	1.40	1.80	1.00	0.62	0.81				.11										6.63
Lundy	East Walker									.75						*	1.80	.50															3.05
McKinney	Truckee								.58	.14		.05	.68		.72	2.59	1.62	1.35	1.03	.08			.20										9.04
Markleeville	East Carson				T.				.47	T.	.06	T.			.38	1.48	1.54	.20	.41			T.											4.54
Shields Ranch	East Walker				T.				.05		.15					.87	.35																1.42
Silver Creek	East Carson				.18				.70	T.	.20	.09			.67	1.93	2.07	.37	.47			T.											6.68
Tahoe	Truckee								.55				.50		.85	1.97	1.40	.55	1.50	T.			.12										7.44
Tallac	do								.25	.14		T.	T.		1.05	2.00	1.10	1.00	.70	T.			T.										6.24
Truckee	do																																
Woodfords	West Carson														.70	1.30	.60	.40															3.00
Nevada.																																	
Arthur	Humboldt	T.									*	*	*	*	*	*	*	*	*	.35													0.35
Austin	Reese																																
Battle Mountain	Humboldt									.25			T.				.01						.01										0.27
Beowawe	do								.50			.30	T.				T.		.10			T.	T.										0.90
Carlin	do				T.				.03	T.		.01	.01			.01	.01	T.	.01			T.	.01		T.								0.09
Carson Dam	Carson									T.						.29																	0.29
Cherry Creek	Humboldt										.03	T.					.22																0.25
Clover Valley	do																																
Columbia	Desert									T.	.22					.02	.01																0.25
Dry Farm	Humboldt									.11			.14				.23						.12										0.60
Elko	do								T.	.12		T.	.14			T.	.08	.10	T.	.03			.02										0.49
Eureka	do				.04					.03						.15	.18	.08		T.			T.										0.48
Fallon	Carson				T.					.10						.11	.03							.01									0.25
Fernley	Truckee				T.					T.	T.					.60							T.										0.60
Gardnerville	Carson				T.				.01		.04				.01	1.00	*	.19	.02				T.										1.27
Gerlach	Desert											.05				.01																	0.06
Geyser	Humboldt																																
Glenbrook	Truckee								.25	.25	T.	.10			1.00	2.00	1.00	.10	.25					T.									4.95
Golconda	Humboldt								.40			.10				.10							.10										0.70
Halleck	do									.03			.30				.01			.15			T.										0.49
Hawthorne	Desert																																
Hylton	Humboldt				*	.20				.09		*	.20			*	*	.17															0.66
Jean	Desert										.30																						0.30
Lahontan	Carson			T.					T.						T.	.20	.02						T.										0.22
Lewers Ranch	Truckee	.15			T.				.60						.40	1.20	*	1.20															3.55
Lida	Desert																.09																0.09
Lovelocks	Humboldt																																
McDermit	do																																
McGill	do									T.	.15					.54							T.										0.69
Metropolis	do			T.					.30	T.			.14				.10	T.	T.				.10										0.64
Mill City	do								*	.15						.15		.02					T.										0.32
Millett	Reese																.10					T.	T.										0.10
Mina	Desert					T.										T.	.06																0.06
North Fork	Humboldt				.20				.28			*	.70			.10	.16	.40	.60															2.44
Oasis Ranch	Desert				T.						.02					.11	T.																0.13
Potts	Reese																																
Quinn River Ranch	Humboldt							.03	.02			.14				.20	.08	.02					.18										0.67
Rebel Creek	do				.03			T.	.02	.20		.07	.02			.62	.04	T.	T.				.23										1.23
Reno	Truckee				T.				.07		T.		T.		.05	.85	.49		T.				T.										1.46
Smith	West Walker						.02		.03		.20					.28	.30																0.83
Soda Lake	Carson																																
Spooners Ranch	Truckee	T.		T.		T.			*	.25		T.				*	*	*	3.00	T.			T.		T.								3.25
Sweetwater	East Walker																																
Tecoma	Humboldt										.02						.25						.12										0.39
Tonopah	Desert										T.					.18							T.										0.18
Wabuska	Walker																																
Wells	Humboldt									*	.10				*	.10																	0.20
Willow Point	Little Humboldt.									.20		.30				.60							T.										1.10
Winnemucca	Humboldt	T.							.04	.20		.02	T.	.01		.18	T.	T.	.04				.10										0.59

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 10, Great Basin.*

Date.	Burns, Oreg.		Nevada.																							
			Cherry Creek.		Elko.		Eureka.		Fallon.		Jean.		Millett.		Mina.		Oasis Ranch.		Quinn River Ranch.		Reno.		Tecoma.		Tonopah.		Winnemucca.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	26	13	35	23	41	21	39	21	48	19	57	27	48	29	61	18	43	23	40	19	46	23	44	8	37	22	41	21
2....	27	12	46	10	43	10	48	12	49	12	58	29	45	6	62	15	47	16	43	13	50	19	44	0	43	25	50	16
3....	27	12	53	30	51	21	53	20	64	11	65	36	61	4	60	17	52	17	49	8	60	19	50	− 9	50	34	56	17
4....	12	− 2	45	8	42	12	43	5	45	20	58	20	52	12	54	16	38	18	43	15	35	9	48	− 3	34	3	27	6
5....	15	− 13	46	8	14	− 8	9	− 18	22	1	50	4	15	14	26	11	18	6	18	1	17	4	43	−12	6	− 3	17	− 3
6....	24	− 1	9	− 3	11	− 16	7	− 16	18	− 10	28	1	14	−12	20	12	18	− 2	17	−16	21	− 1	40	−29	9	− 6	18	− 13
7....	30	9	6	− 15	24	− 7	27	− 12	30	− 11	30	− 6	23	−12	31	10	25	− 1	20	− 6	33	4	43	−24	24	2	26	− 1
8....	33	− 2	25	− 11	37	18	28	− 6	46	11	40	− 5	41	0	38	18	23	− 8	34	12	43	24	45	−12	26	14	33	15
9....	25	− 4	36	10	29	11	23	10	42	8	42	6	33	11	38	12	34	3	26	16	34	14	47	− 3	26	13	28	4
10....	25	5	29	19	18	− 15	20	− 5	24	7	37	12	31	− 4	38	14	37	7	24	−11	31	11	44	− 4	21	11	25	− 7
11....	34	9	28	− 5	23	− 18	27	− 6	28	− 5	34	− 3	27	11	30	1	31	− 7	20	− 8	38	8	42	−19	21	8	27	− 7
12....	39	27	40	20	42	19	44	18	44	15	33	− 6	40	17	39	9	35	12	42	18	49	31	47	− 6	26	13	44	26
13....	42	11	42	17	40	28	34	16	50	31	36	− 2	40	15	40	13	40	17	43	28	53	34	45	1	28	21	47	33
14....	37	11	38	30	40	31	36	16	51	20	40	6	45	23	47	11	41	20	47	29	44	33	45	2	33	20	45	24
15....	36	5	40	24	40	30	35	14	43	30	55	9	35	24	37	19	34	25	40	27	40	25	44	− 5	32	22	34	18
16....	36	7	36	15	35	11	39	12	37	19	51	10	30	10	37	13	36	24	34	5	31	23	45	− 3	29	22	34	7
17....	39	14	33	20	34	13	30	11	47	19	51	23	[41	14	41	17	36	7	34	14	45	25	43	3	30	21	42	18
18....	32	− 2	40	30	42	30	41	18	51	27	50	28	47	29	44	14	41	15	43	28	44	35	47	3	33	26	45	18
19....	32	− 3	35	11	38	3	36	9	46	17	50	33	[42	23	39	6	38	17	34	14	36	10	43	9	29	14	32	13
20....	38	19	20	− 8	25	− 20	32	− 6	37	14	53	20	32	− 1	44	14	39	7	32	5	31	5	44	−15	28	11	33	0
21....	32	19	42	10	30	− 7	43	9	42	7	54	8	35	− 1	42	15	37	0	34	18	46	11	45	−14	35	20	38	12
22....	39	− 6	35	25	32	19	36	21	43	27	58	5	40	31	45	14	38	1	42	22	39	29	45	4	34	23	37	14
23....	36	19	28	− 1	29	− 19	31	6	40	9	60	8	38	10	41	22	36	20	22	−10	37	22	43	−20	29	17	34	1
24....	45	23	40	6	36	− 1	43	9	44	12	63	12	51	7	55	16	41	18	42	8	46	20	44	− 7	42	23	40	16
25....	44	19	45	17	44	19	49	18	52	15	60	22	52	7	53	17	48	20	48	12	46	21	50	− 3	45	32	50	20
26....	38	8	39	15	38	6	45	17	47	12	64	36	53	6	52	19	48	21	49	9	45	18	50	1	46	32	45	20
27....	36	4	39	11	39	0	45	16	47	17	65	36	50	5	55	17	46	19	44	11	44	20	52	1	46	34	45	18
28....	32	− 1	41	10	36	− 3	47	16	48	12	63	29	48	6	50	16	47	18	47	9	43	20	48	− 3	47	33	46	16
29....	34	8	45	18	41	− 1	46	18	53	16	66	32	52	5	56	17	48	21	48	8	49	20	50	− 1	47	31	50	14
30....	35	10	40	19	41	12	40	16	51	16	67	36	50	10	54	23	52	24	45	15	50	22	47	8	46	29	46	20
31....	48	7	40	15	37	8	37	15	52	15	69	36	50	11	52	19	53	27	47	15	48	21	48	2	44	25	48	17
Mns..	33.2	7.7	36.0	12.2	34.6	6.7	35.9	8.8	43.3	13.5	51.8	16.2	40.7	10.0	44.5	14.4	38.7	13.1	37.2	10.6	41.1	18.7	45.6	−5.6	33.1	19.1	38.2	12.2

Date.	Wyoming.				Weston, Idaho.		Utah.																			
	Border.		Evanston.				Blackrock.		Corinne.		Government Creek.		Marysvale.		Meadowville.		Modena.		Ogden.		Parowan.		Provo.		Salt Lake City.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	28	9	29	7	32	13	46	16	30	1	37	19	45	20	29	7	42	17	31	10	47	23	35	12	33	16
2.....	30	− 3	28	1	31	6	41	2	39	7	35	28	40	5	33	3	44	12	39	10	49	14	30	0	31	16
3.....	38	18	40	20	41	15	60	4	37	9	40	20	54	− 2	41	27	60	14	43	15	59	17	41	5	44	21
4.....	33	1	33	2	40	13	55	6	39	6	41	13	14	9	34	9	35	11	25	17	49	11	39	16	30	13
5.....	9	−24	12	−10	14	− 6	53	5	29	− 1	15	−16	12	2	16	− 7	12	− 7	20	5	12	1	20	0	14	3
6.....	− 2	−32	3	−28	10	−17	17	−10	24	−10	7	−17	5	−10	6	−20	8	−13	12	− 8	9	−10	10	−15	10	0
7.....	3	−27	5	−22	10	−15	20	−17	24	−12	13	−14	15	−16	15	−15	18	−14	16	− 5	14	−15	15	−14	15	− 2
8.....	20	−15	35	− 2	27	6	38	− 6	24	6	31	10	40	− 6	24	3	36	− 2	32	− 5	33	1	32	− 1	32	10
9.....	34	17	33	15	33	19	38	19	30	10	33	14	32	− 2	34	17	29	11	37	14	38	3	32	22	38	24
10.....	20	5	23	2	28	6	30	4	35	15	31	− 1	27	0	27	9	29	7	32	18	39	15	30	25	26	20
11.....	18	0	16	− 3	22	− 1	32	− 8	33	15	21	− 3	29	− 4	22	0	29	− 6	30	5	29	− 2	30	− 5	26	15
12.....	28	8	26	9	32	19	42	20	35	13	32	16	46	13	31	12	34	10	37	17	37	12	37	13	38	22
13.....	33	8	38	8	38	22	47	6	32	15	39	26	45	9	41	15	44	9	43	22	43	13	38	7	41	26
14.....	40	14	39	12	40	32	45	30	38	14	40	24	47	32	41	21	40	24	45	27	44	25	40	25	45	36
15.....	40	8	36	17	43	29	49	25	33	11	43	14	40	30	41	22	42	16	43	34	44	27	50	16	49	37
16.....	33	14	33	22	43	22	42	23	29	12	40	7	39	27	35	21	32	26	37	28	38	19	44	26	42	26
17.....	24	11	24	9	32	12	41	23	40	10	34	.....	40	22	29	14	38	25	40	17	40	27	38	18	39	26
18.....	34	10	34	3	41	25	43	30	40	25	38	.....	47	20	39	19	37	30	41	19	38	22	43	26	44	32
19.....	30	− 9	32	6	32	0	38	22	40	12	40	.....	39	11	31	1	42	14	31	14	41	25	40	15	32	16
20.....	12	−25	15	−14	24	− 3	32	− 1	41	1	35	.....	29	− 4	15	− 6	29	5	26	4	32	7	23	− 7	27	11
21.....	19	−14	32	− 5	28	11	48	12	38	5	39	.....	42	1	26	− 3	41	6	36	5	46	8	36	− 2	34	12
22.....	25	9	36	8	28	20	42	17	36	6	37	.....	41	6	32	10	35	13	32	12	40	8	37	16	34	24
23.....	24	− 8	25	4	31	4	35	13	29	3	29	.....	30	12	23	5	33	11	32	19	36	20	32	3	27	16
24.....	19	− 7	27	2	29	7	42	1	31	2	35	.....	40	− 1	26	0	42	4	41	8	47	10	29	− 5	31	14
25.....	42	17	36	21	39	24	50	7	36	10	48	.....	48	9	32	15	49	13	46	20	51	21	42	14	43	29
26.....	36	0	34	9	40	11	48	8	38	7	49	.....	43	10	36	12	46	17	43	17	48	28	40	7	41	25
27.....	14	−14	33	1	32	4	47	5	40	11	46	.....	43	6	37	5	43	10	41	13	47	15	37	6	40	23
28.....	30	−12	42	0	37	3	48	3	42	10	49	.....	46	5	37	− 4	46	10	42	12	49	15	37	3	39	21
29.....	23	−15	36	2	36	5	55	3	39	9	44	.....	48	8	38	− 2	54	16	44	12	52	17	41	3	42	22
30.....	29	− 5	32	16	35	15	46	10	39	7	38	17	40	25	32	10	45	16	40	15	46	26	42	14	39	29
31.....	30	0	27	11	32	10	47	7	40	12	36	18	42	12	34	4	44	18	34	20	46	20	32	11	35	26
Mns....	25.7	−2.0	28.8	4.0	31.6	10.0	42.5	9.3	34.8	7.8	35.3	9.7[m]	37.0	8.0	30.2	6.6	37.4	10.4	35.2	13.3	40.1	13.6	34.6	8.2	34.2	19.6

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the board.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

January, 1913, was the coldest January since 1898. In some localities lower temperatures were recorded than at any time since records have been kept. During a period of cold weather covering the last week in December, 1912, and the first week in January, 1913, temperature records were broken at a number of places in the State. Perhaps the most noticeable of these was at San Diego, where a minimum of 28.4° occurred at 4.15 a. m., Monday, January 6, breaking all minimum records at this station for a period of 64 years. On the next morning a minimum of 24.9° was recorded at 6.15 a. m., or 3.5° lower than the minimum of the preceding day. The lowest minimum at Los Angeles was 28°, or as low as any previously recorded. At Fresno a minimum temperature of 17° was recorded, or 3° lower than had previously occurred. At San Luis Obispo a minimum temperature of 20° was recorded, which was the lowest for 18 years. In the northern portion of the State the temperatures did not fall as low as in the southern portion. Thus, at San Francisco, while the minimum temperature on the morning of the 6th was the lowest for many years, it was 4° higher than the low temperature recorded on January 15, 1888. At Southeast Farallon a minimum temperature of 39° occurred on the 6th and 9th, and only once in the past 10 years has a lower temperature been recorded. At Mount Tamalpais the temperature fell to 22°, which was the absolute minimum for a period of 15 years. Likewise at Point Reyes Light a minimum of 33° was recorded, which is the lowest in 22 years. At Sacramento a minimum of 26° occurred, but this did not break the record, which for a period of 36 years is 19°. At Red Bluff the minimum temperature was 28°, or 10° above the lowest of record. At Eureka a minimum of 28° occurred, which was 8° above the record. Elsewhere will be found a discussion of the frosts and minimum temperatures in the citrus fruit belts of California. In a general way it may be stated than not since January, 1888, has there been a cold period so severe throughout the State as a whole, while in the southern counties the temperature was lower than has been known for a period of 60 years.

The month was one of nearly normal precipitation, although it was not well distributed, nearly all occurring between the 8th and the 22d. There was no rain during the last week of the month.

January, 1913, was in marked contrast to January, 1912, which was a warm, dry month. The month began with a pressure distribution favorable for north winds and comparatively low temperatures. Heavy frosts occurred January 4, 5, 6, 7, and 8, for which ample warnings were given. A depression of unusual depth over the Valley of the Colorado on Saturday, January 4, and Sunday, the 5th, caused high north-northwest winds, and typical frost conditions occurred on the 6th, 7th, and 8th. The most severe weather known for many years was reported during this period and great injury was done to oranges, lemons, nursery stock, and ornamental trees. The damage can not safely be estimated, as it was far-reaching. In connection with the citrus industry a conservative estimate of the loss is $15,000,000. Fortunately the killing frosts were followed by cloudy, rainy weather with no high temperatures, and the weather continued unsettled for about a fortnight. Thunderstorms occurred in the San Francisco Bay section on the 14th and 15th and in the Sacramento Valley on the 15th.

The snowfall was above the normal and at the close of the month the depth and extent of the snow cover was much greater than at the close of January, 1912. The run-off was light and while there was no excess of water, there have been no complaints of scarcity.

TEMPERATURE.

The mean temperature for the State was 4° below the normal, and with one exception it was the lowest since 1896. The following table gives the means and departures for each January from 1897 to 1913, inclusive:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	° F.	° F.		° F.	° F.
1897	45.5	−0.3	1906	47.5	+1.7
1898	41.0	−4.8	1907	43.9	−1.9
1899	46.4	+0.6	1908	46.7	+0.9
1900	47.9	+2.1	1909	47.8	+2.0
1901	43.9	−1.9	1910	41.9	−3.9
1902	44.5	−1.3	1911	45.7	−0.1
1903	46.6	+0.8	1912	47.7	+1.9
1904	45.8	0.0	1913	41.6	−4.2
1905	48.3	−2.5			

The highest temperature recorded at any station was 88° at Azusa, and also at San Jacinto, on the 3d. This was not as high by 2° as the highest recorded during January, 1912. The lowest temperature was −21° at Alturas on the 23d. This was 5° higher than the lowest temperature recorded during January, 1912. The highest monthly mean was 52.6° at Avalon. The lowest monthly mean was 18.5° at Macdoel.

PRECIPITATION.

The precipitation was nearly normal. The following table gives the average precipitation and departure from the normal for each January from 1897 to 1913, inclusive:

Year.	Mean.	Departure.	Year.	Mean.	Departure.
	Inches.	*Inches.*		*Inches.*	*Inches.*
1897	2.69	−2.72	1906	7.86	+ 2.45
1898	1.08	−4.33	1907	7.46	+ 2.05
1899	3.53	−1.88	1908	4.63	− .78
1900	3.30	−2.11	1909	16.17	+10.76
1901	5.21	− .20	1910	4.86	− .55
1902	1.38	−4.03	1911	13.20	+ 7.79
1903	4.56	− .95	1912	3.58	− 1.83
1904	1.38	−4.03	1913	5.06	− .35
1905	4.37	−1.04			

The greatest monthly precipitation was 20.47 inches at Branscomb. At two stations no precipitation was reported during the month. The greatest 24-hour rainfall was 5.40 inches at Mono Ranch on the 15th.

Snowfall.—There was a moderate snowfall in the mountains, and at the close of the month more snow remained on the ground than at the same date last year and about as much as in 1908. There was less snow than in 1909 and 1911. The month was so cold there was less melting and also less evaporation than usual. The run-off was light, and at nearly all points streams were lower than usual. The following table shows the depth of snow on the ground at Summit, Cal., on certain dates in January during the period 1907 to date:

	Jan. 1.	Jan. 15.	Jan. 31.
	Inches.	*Inches.*	*Inches.*
1907	45	142	148
1908	87	72	87
1909	28	90	172
1910	54	87	68
1911	4	136	218
1912	60	46	41
1913	17	72	88

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Stations.	Hours.	Percentage of possible.	Stations.	Hours.	Percentage of possible.
Eureka	153	45	Sacramento	192	63
Fresno	178	58	San Diego	230	72
Los Angeles	223	71	San Francisco	186	60
Mount Tamalpais	194	63	San Jose	194	63
Red Bluff	182	60	San Luis Obispo	193	62

CHANGES IN NAMES OF STATIONS.

The following changes have been made in the names of stations, and the new names are used, beginning with the present issue:

Bear Valley No. 1 changes to Lake Spaulding.

Prattville changes to Nevis.

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS DURING JANUARY, 1913.

By N. R. TAYLOR, Local Forecaster.

Sacramento Watershed.—The rivers of this watershed averaged from 1 foot to over 5 feet above that of the preceding month. They were, however, below the stages usually maintained during the month of January.

General and heavy rains fell in the watersheds of the Upper Sacramento and Lower Pit rivers from the 12th to the 19th, inclusive, with considerable snow at low altitudes, causing a rapid rise in the Sacramento River north of the Feather. At Red Bluff the river rose 13 feet during the 24 hours ending at 7 a.m., of the 14th. This swell reached Jacinto on the 15th and Colusa on the 16th, causing rises of 7 and 11 feet, respectively, at those places. The swell flattened as the lower reaches of the river were approached and amounted to only 4 feet at Sacramento City. The highest stage reached was 21.9 feet at Colusa on the 16th.

The rainfall in the American, Feather, and Yuba watersheds was coincident with that of the Sacramento, except that there was considerably less. There was, however, a heavy snowfall above the 2,000-foot level and especially in the higher regions, but owing to the prevailing low temperatures neither the main streams nor their feeders showed any marked increase in run-off.

On about the 20th all streams in the Sacramento Basin began falling and continued to do so until the close of the month.

At the end of January the accumulated snow in the mountains ranged from about 18 inches at the 4,000-foot level to nearly 8 feet at the summits.

The Lower San Joaquin Watershed.—Rain was general throughout the drainage basin of the Lower San Joaquin Valley from about the 14th to the 20th, inclusive. It was heavy in the upper watersheds of the Tuolumne, Stanislaus, Calaveras, Mokelumne, and Cosumnes with heavy snow at the higher levels. On the floor of the valley the rainfall was relatively light, especially north of San Joaquin Bridge. Notwithstanding the rainfall the rivers remained low during the greater part of the month and there was no rise at any time greater than 1 foot.

After the 20th all streams fell slowly and by the close of the month had practically reached the low stages that obtained prior to the rains.

NOTES ON THE STREAMS OF THE UPPER SAN JOAQUIN WATERSHED.

By W. E. BONNETT, Local Forecaster.

Rainfall during January, like that of the preceding several months, was largely deficient in the watershed of the Upper San Joaquin River, and the streams remained at low stages. The deficiency in seasonal precipitation about equals the shortage to January 31, 1912, and the mean stages at Merced Falls and Friant for January this year are the same as last year. At Firebaugh there was no fluctuation in the stream during the month and the stage was the lowest recorded in January.

Following the general rains of the 15th, 16th, and 17th the Merced rose about 1 foot and fell slowly during the remainder of the month. Precipitation was lighter in the watersheds of the Upper San Joaquin itself and in the Kings, and rises at Friant and Piedra were extremely small.

DAMAGE BY LIGHTNING NEAR SAN FRANCISCO.

By A. G. MCADIE.

On January 15, 1913, shortly before 1 a. m., lightning struck the tower of the life-saving station at Bonita Point and did considerable damage. It set fire to the captain's room, but it was quickly extinguished; the damage was estimated about $500. A flagpole, standing on somewhat higher ground to the northward, was also struck and partly destroyed. It may be stated that occurrences of this kind while rare are not unknown. At San Francisco the first thunder was heard at 12.01 a. m., and last at 1.15 a. m. The direction of the wind before the storm was southwest and after the storm south. The temperature before the storm, 52°, and after the storm, 42°.

NOTE ON WEATHER AT FRESNO, CAL., DURING JANUARY, 1913.

By W. E. BONNETT, Local Forecaster.

January was a month of abnormal and generally unfavorable conditions. A severe dust storm occurred on the 4th, when the wind increased during the forenoon to 30 miles per hour by noon, a velocity which was then maintained for about six hours, and a new wind record

for the month of January established when the maximum, 36 miles from the west, was recorded at 2.51 p. m. Owing to the dry condition of the soil the air filled with dust as the wind rose and the sky was entirely obscured by it during the whole afternoon, the disk of the sun being faintly visible only at times. The dust penetrated buildings of even the best construction, leaving a thick coating everywhere. Objects two city blocks distant were obscured. Besides making the day unpleasant, there was damage to wearing apparel, house furnishings, etc. The air was extremely dry and the per cent of humidity decreased to a midsummer minimum by 5 p. m., making the storm particularly damaging to vegetation. In loose, light soils some grain was blown out in places, while in other places it was buried under the wind-transported material. Considerable dust was held in suspension in the air during the 5th and 6th and the sun shone with a sickly light.

This unusual dryness had an important effect in producing the record-breaking freeze on succeeding days. The temperature fell during the 5th, and on the morning of the 6th a minimum of 17° was recorded at this station, 3° lower than the lowest previously recorded minimum in 26 years of record. Standard instruments on the ground recorded 14° and 15° on the 6th and 7th, respectively, and from lower portions of the valley floor readings of 10° and 12° were reported.

Citrus trees and citrus nursery stock were badly frozen, but not entirely killed, except the nursery stock in a few localities. Practically all of the fruit remaining on the trees was completely frozen, a small proportion of the whole crop, as nearly all had been marketed. However, a full year's growth on citrus trees was frozen and will have to be pruned away. Eucalyptus of several varieties, acacias, and pepper trees were frozen severely and the younger trees killed. Ice 2 inches thick formed in considerable volume. A film of ice formed on irrigation ditches in places, a phenomenon which had not been observed here for many years. Much damage was occasioned by frozen water pipes, one plumber alone reporting that 200 calls were made to repair that class of plumbing troubles.

The month closed with some very pleasant but unseasonably warm weather, and the temperature deficiency for the month as a whole is not large. Rainfall for the month was about three-fourths of the normal amount and up to the 31st but one-half of the normal seasonal amount has been received.

REPORT ON RECENT DESTRUCTIVE FROSTS IN CALIFORNIA.

By Prof. A. G. MCADIE.

For many years the Weather Bureau had advised citrus-fruit growers of California that widespread injury might result in unprotected orchards when conditions out of the usual occurred; and that preparation should be made even in the most favored localities for temperatures as low as 24° F. It was pointed out that there had been many dates in the past 35 years when weather conditions were so severe as to cause injury to citrus fuits. The following table shows how frequently such low temperatures have occurred:

1878, Dec. 14.	1889, Jan. 19.	1906, Jan. 1.
1879, Dec. 25.	1894, Jan. 6, 7.	1907, Jan. 2.
1880, Jan. 29, 30, 31.	1897, Dec. 19, 21.	1910, Jan. 6.
1882, Feb. 18.	1898, Jan. 26.	1911, Feb. 16.
1883, Jan. 20, 21.	1901, Dec. 13.	1911, Dec. 25, 26.
1883, Feb. 3, 4, 6.	1902, Dec. 26.	1912, Dec. 23–30.
1886, Jan. 6.	1903, Feb. 14, 15.	1913, Jan. 4, 5, 6, 7.
1888, Jan. 7, 8, 9, 10.	1904, Jan. 21.	

It is somewhat difficult to determine what constitutes a dangerous temperature in connection with citrus fruits, inasmuch as most temperature records have been made in shelters and do not fairly represent the temperature to which fruit is exposed. At San Diego and Los Angeles the recorded values at the Weather Bureau offices are from 5° to 10° above those made in the orange groves a few miles distant, and there appears to be an increase in this difference with distance from the coast. Again, temperature varies with height above the ground and inversions are frequently found during winter mornings. An instrument placed near the top of a tree will generally give a temperature much higher than one placed near the ground. Furthermore, the freezing point commonly used is not necessarily the freezing point for water in the plant. Finally, injury is probably determined more by the rate of warming up after the blossom or fruit has been subjected to a freezing temperature than by the fall in temperature. In other words, defrosting is a matter of the utmost importance.

Oranges and lemons are commercially grown in Florida and in portions of Louisiana, as well as in California; but the extent of the industry in California may be judged from the following table, which shows the shipment of citrus fruit from the whole State for the past 19 years:

Season.	Carloads.	Season.	Carloads.
1894–95	7,575	1904–5	31,422
1895–86	6,915	1905–6	27,610
1896–97	7,350	1906–7	29,820
1897–98	15,400	1907–8	32,729
1898–99	10,875	1908–9	40,516
1899–1900	18,400	1909–10	33,099
1900–1	24,900	1910–11	46,594
1901–2	19,180	1911–12	36,283
1902–3	23,875	1912–13	.....
1903–4	29,399		

The above data are in the main from the California Fruit Grower.

On December 24, 1912, the crop was estimated at 48,000 carloads. Within a week from this time the injury had been so great that now no reliable estimate can be made. A somewhat similar condition occurred during the preceding year. Estimates of the crop of 1911–12, made previous to the frost of December 25–26, made the crop 50,000 carloads. It is generally conceded that the money loss caused by the frosts in the closing week of 1911 amounted to $5,000,000. The loss during the last week of December, 1912, and the first week of January, 1913, may exceed $15,000,000.

In both of these frost periods ample warning of the fall in temperature was given, and in some localities intelligent and well-directed effort was made to prevent the lowering of the temperature. This was particularly the case at Pomona, where the orchardists are organized under the lead of Mr. J. E. Adamson, in a protective association. The methods employed were described in the Monthly Weather Review for July, 1912. Reports are received hourly, or oftener if necessary, during the early night at a central station, and a tag for each report is placed upon a large map of the district in its proper place. It is thus possible to estimate the rate of change in temperature; and to order the necessary firing, which is done by the force under the direction of the general manager. Records show a rise in temperature of 6° one hour after firing.

The protective devices used are oil burners of simple construction, the fuel being a low grade of distillate. As originally used, these burners did not consume all of the carbon, but gave off a soot-laden smoke. The soot has been found to be not only extremely disagreeable,

but detrimental, and in fact it is necessary to wash the orange to remove the soot. The more modern burners provide better combustion and as used during the present frost periods were more effective than the old-style open pot. As will be shown later, there was an extremely low humidity during the present frost, and it became evident that in addition to heat there must be provided a supply of water vapor. A simple and economical form of heater which seems to meet these requirements is described in the Monthly Weather Review for April, 1912 (p. 618).

The frost periods under discussion differ from the frosts of December 25–26, 1911, in that the strong winds preceding the frost came apparently from the north and northwest rather than as usually happens from the northeast. It would appear that instead of the usual draft through the Cajon Pass, elevation 3,823 feet, the winds came over the Sierra Madre—i. e., over a range with elevations exceeding 6,000 feet. Such air descending would be somewhat drier than air passing through the pass. While accurate records of air motion are not available, some unusual conditions were noted. On January 3 it was a matter of general comment in the valley that the norther began in the west, the wind blowing first from the west, or even southwest, and then veering to the north. It was also noted that the wind began at Wineville earlier than at Riverside and blew hard for an hour, followed by a calm at Wineville, while high winds prevailed in other sections.

A detailed description of the valley can be found in the Monthly Weather Review for December, 1910. The Sierra Madre crosses California, running east and west, 200 miles and more. A portion of the range is known as the San Gabriel Mountains and extends from the Santa Clara River to the Cajon Canyon. Another portion of the range is known as the San Bernardino Mountains and extends from the Cajon Pass eastward to the headwaters of the Santa Ana River. Some of the high peaks are: San Gabriel, 6,152 feet; Mount Wilson, 5,886 feet: Sugar Loaf, 7,006 feet; Ontario, 8,752 feet; Cucamonga, 8,911 feet; North Baldy, 9,000 feet; San Antonio, 10,080 feet; San Bernardino, 10,630 feet; and San Gorgonio, 11,485 feet.

During frost periods the air drains slowly to the southwest from Nevada; also south through the Owens Valley in California. Crossing the Mojave Desert, the surface air ascends the northern slopes of the Sierra Madre and descends into the San Gabriel Valley. The normal drainage in the valley is from northeast to southwest during the morning hours, with a return current during the afternoon hours. Wind effects are marked near the passes. High winds often blow across the valley from the Cajon Canyon to the Jurupa Mountains, a small range not exceeding 2,260 feet, lying northwest of Riverside. The Santa Ana River drains much of the valley, and the channel of this river, the extensive washes and the numerous hills and minor ranges all play a part in influencing the air drainage of the valley. There are well-marked frost belts and these in general are in the wind-sheltered areas. The descending air is both dry and dust-laden. When the wind lulls, the soil, mostly river wash, coarse sand, gravel or sandy loam, loses heat rapidly by free radiation. During the still hours of the night and before the return flow of moisture laden air from the sea can be effective, the temperature falls rapidly.

The following tables give the minimum temperatures recorded at a number of points in the valley from December 24, 1912, to January 8, 1913.

It will be noted that a minimum of 28.4° occurred at San Diego at 4 a. m., January 6, and 24.9° on January 7, at 6.15 a. m., breaking all records for minimum temperatures at that station.

Minimum temperatures, December, 1912.

Stations.	24	25	26	27	28	29	30	31
Azusa	24	31	32	41	34	32	34	34
Beaumont	44	34	42	43	33	35	42	41
Chino	32	28	28	28	30	28	28	30
Claremont	34	32	33	30	32	36	37	37
Colton	34	36	34	33	33	32	33	38
Duarte	34	32	37	45	38	.....	38	37
Escondido	25	24	50	30	23	24	28	27
El Cajon	26	25	27	31	24	27	30	29
Los Angeles	45	38	43	46	45	46	47	43
Monrovia	34	32	35	40	40	38	36	38
Orange	29	32	32	32	28	30	30	33
Pasadena	33	30	32	31	31	33	36	36
Pomona	28	26	26	26	28	30	30	29
Redlands	33	32	29	29	31	33	36	35
Riverside	28	26	34	32	27	30	33	32
San Bernardino	25	26	36	24	25	27	32	31
San Diego	42	42	44	46	43	43	42	39

Minimum temperatures, January, 1913.

Stations.	1	2	3	4	5	6	7	8	9	10
Azusa	38	40	52	33	25	22	20	26	33	33
Beaumont	35	34	32	29	20	16	24	32	34	34
Chino	28	28	30	30	30	28	16	16	22	22
Claremont	37	39	44	37	27	25	19	26	35	34
Colton	43	45	44	36	28	27	19	27	36	38
Duarte	41	45	55	40	.....	28	28	27	39	37
El Cajon	39	38	34	34	30	20	21	19	28	38
Escondido	39	40	37	29	32	15	13	18	26	35
Fresno	38	35	33	31	24	17	20	27	32	32
Los Angeles	47	45	55	43	36	30	28	36	40	39
Monrovia	42	38	40	30	28	24	18	19	38	34
Pasadena	40	40	44	36	31	25	21	25	35	34
Pomona	41	36	36	29	25	21	18	22	36	30
Redlands	35	42	42	39	31	22	18	24	34	36
Riverside	36	43	37	32	30	21	22	22	33	36
San Bernardino	30	44	35	32	31	26	18	19	32	34
San Diego	48	48	51	46	36	28	25	34	41	39

The lowest temperatures occurred on the morning of January 7, although on the morning of the 6th and the morning of the 8th dangerously low temperatures were recorded.

The general weather conditions on the morning of January 7 were as follows: A well-marked area of high pressure overlaid the Great Basin and the southern half of the Pacific slope. The pressure was also unusually high over the Rocky Mountain section, the Missouri Valley, and Manitoba. A well-marked disturbance overlying the Mississippi Valley was accompanied by cloudy weather and rain or snow over the entire country east of the ninety-fifth meridian. The isotherm of freezing temperature extended from the west gulf coast northeastward to the Ohio Valley and thence to New England.

The pressure of distribution was typical for frost in southern California. Study of the weather maps from January 3 to January 12 will show that there was a progressive increase in the severity of the weather from Friday afternoon until the following Wednesday. On Saturday, January 4, brisk winds began shortly after noon and continued until 3 a. m., January 6. Attention is directed to the marked effect of this brisk wind upon the temperature. During the midday hours on the 4th, 5th, and 6th the temperature did not rise much above 50°, and in some places did not reach 50°, or thirty degrees lower than the normal midday temperature. This strong wind would undoubtedly have had a beneficial effect and prevented rapid cooling had the air been stratified and the usual distribution of heat existed. On the contrary, the whole mass of air to an elevation of possibly several thousand feet was at a low temperature. If a comparatively warm stratum existed a short distance above the

ground, it was not of sufficient thickness to materially raise the temperature. The thermograph records from noon, January 5, until midnight are significant. For some as yet unexplained reason there was a rise in temperature of 6° between 10 p. m. and midnight of January 5. There was also a peculiar fluctuation in the moisture content of the lower air. The wind produced a marked drying effect and for a period of nearly 96 hours the curve showing percentage of saturation is quite unlike the curve usually given during frosts in these localities. The usual conditions are still, quiet nights when the minimum is determined primarily by free radiation. As a rule there is little air motion in these localities at times of frost and as any loss of heat by convection is small, it would appear that during the interval referred to above, while air motion was active large volumes of comparatively cold air, i. e., as cold as the radiating surface, if not colder, passed over and through the orchards. The character of the radiating surface is of course of great importance, perhaps of as much importance as the exposure. Doubtless some of the apparent inconsistencies reported may be due to convective gains on the one hand and interference with free radiation on the other, both contributing to keep the temperature higher than would ordinarily be the case. The data collected are insufficient to establish the height of the level of lowest temperature. It is also a matter of regret that instruments for continuous and detailed records of wind velocity and direction are not available.

In general the citrus fruit was subjected to temperatures below freezing for four successive periods, averaging 4 hours for the first, 4 hours for the second, 13 hours for the third, and 9 hours for the fourth. In all it may be said that in a total period of 72 hours during which under normal conditions the plants would have received a supply of heat approximately represented by 1,500 hour degrees, starting from a temperature of 40° F., they received only 220 hour degrees. There were 170 hour degrees below freezing and of these 50 were below 25° F. In a general way there were 30 hours when the temperature was below freezing; 12 hours when it fell as low as 25° F., and 2 hours when the temperature did not exceed 20° F.

Of the many reports which have been submitted, a few have been selected and are given below:

Riverside, Cal., February 6, 1913.—A month has passed since the frost. Regarding the section in West Riverside, which we inspected together, I find that the lemon grove shows considerable injury on the lower half. However, there is practically none of the wood injured, the injurious effects being confined to the leaves and fruit. Most of the trees retain one-half of their leaves. Upon the higher levels there is very little damage, although some of the fruit undoubtedly is injured. Upon sections which seemed clear when you were here, I picked blossoms a week ago which had opened since the frost, also saw small lemons a quarter of an inch in diameter which had not been injured. A considerable section, from 10 to 25 acres, shows no injury. The grape fruit on the high level to the south is also unhurt as to fruit and leaves. The grove of S. L., about a mile from the lemon grove, looks practically uninjured. Mr. L. admits there is considerable damage to this fruit on the lower levels; but not so much as a year ago and he is confident of marketing a good proportion of the fruit. The grove above the road shows no greater damage than it did when you were here. A section a little over a mile wide west from the Golden West lemon grove shows less damage than the balance of the Riverside Valley. Some of the groves are entirely free from injury as to fruit and leaves. Bloomington and Rialto show a number of groves which from the street seem practically unhurt and without doubt there are many sections through these neighborhoods where much uninjured fruit will be harvested. Undoubtedly it is true that this section of West Riverside and a strip through Bloomington and Rialto were injured much less than a year ago and very much less than the balance of the valley, and, further, a great many trees in various parts of this strip escaped injury entirely from this frost.

It is conceded that the lowest general temperature of the first night, January 5 and 6, did practically no damage to most of this section, and that the third night was really more harmful to this locality than the first night.—Dr. C. VAN ZWALENBURG.

Upland, Cal.—The greatest damage was done on Monday night (the 6th) and Tuesday morning (the 7th). There are 1,000 trees on my 10-acre ranch. There was one 1-gallon oil pot to each tree. Heretofore I never had to fire before midnight and the equipment was sufficient to amply protect. On that Monday night water froze at 6 o'clock. I had to stand and take it, knowing that if I lighted before 12 the pots would go out too soon; but at 10.30 p. m., I started lighting and finished by 1 a. m. Began observations at 4 a. m., when it was 20° outside the grove and 28° inside, thermometer placed as far from a pot as I could get it and the same thermometer used. At 5 a. m., the temperature outside was 20° and inside 26°. At 6 o'clock outside temperature 20°, inside temperature 23°. The fires soon went out for lack of oil and the temperature remained near 20° until 7 a. m., and not above 32° until 9 a. m. If I had had four 1-gallon pots to the tree and lighted one at 6, one at 10, and the other two at 2 o'clock, I think I would have saved my crop. I think I have saved some of it as it is. I am not sure but that more heat can be obtained from 1 gallon of stove distillate at 9 cents than from 3 gallons of the slop distillate at the same cost. There should be a burner under every tree and enough distillate stored in the reservoir under the tree to last the season. It is this filling of the pots the next day that kills; also it is very expensive. Under the tree the leaves would prevent the loss of heat by radiation. While the smoke is objectionable in many ways and especially to the community, it must be beneficial in preventing radiation from the earth.

On another 10-acre plot I have the Exchange single-stack pot. There are 690 trees and 690 pots. The trees are 27 feet apart. Temperature results were about the same as above. The pots hold 3 gallons, but are filled to 2¼. More oil is used, but the trees are further apart and so heat is lost. The pots last about 7 hours, but as the stack makes a big draft there is waste of oil. The pots went out a little too early that night.—F. C. CROWELL.

Glenville.—The sand storm that raged in the valley on the 4th and 5th did not reach here and we appeared to be above the wind. The first we knew there was a storm raging about 4 p. m., on the 4th, when a cloud drifted in that we thought was fog but proved to be dust. On the 5th it was calm, but the dust hid the sun nearly all day and the air was filled with it for three days afterwards. It settled on everything and was enough to change the color of the shrubbery and ground.

The cold wave that followed was quite severe. The thermometer registered 9° at this station; but 1 mile east and 400 feet lower on the creek bottom they claimed it was 2° below zero.—C. H. LIKELY.

El Cajon.—On the 5th the thermometer registered 35° at 5 p. m., 30° at 6 p. m., and 32° at 6.30 p. m., and fell to 20° during the night. Oranges frozen solid on this and the following two nights. No smudging. Ice remained unthawed for three successive days. Coldest on record.—H. H. KESSLER.

Pomona.—On the mornings of the 7th and 8th the temperatures outside of the smudge area, but at the same elevation, registered 15° and 18°, respectively.—J. E. ADAMSON.

Squirrel Inn.—The sand storm from the desert on the 4th was terrific, the valley was entirely obscured.—A. D. FRANTZ.

TABLE 1.—*Climatological data for January, 1913. District No. 11, California.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon.																				
Klamath Agency	Klamath	4,169	4	17.4	.....	39	2†	−12	23	31	3.80	.....	0.90	38.0	8	13	9	9	nw.	Edson C. Watson.
Klamath Falls	do	4,100	23	19.0	−11.0	42	3	− 6	23	27	3.57	+ 1.11	0.83	43.0	16	14	4	13	nw.	Augusta J. Hayden.
Lakeview	Lake	4,825	29	21.6	− 6.6	47	27	− 8	6	36	1.04	− 1.54	0.20	12.0	7	11	6	14	s.	C. C. Gott.
Merrill	Klamath	4,070	6	18.6	.....	41	2†	−15	23	39	1.35	.....	0.39	.....	6	5	11	15	.....	Mrs. W. L. Hensel.
Yonna	do	4,146	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
California.																				
Alturas	Modoc	4,400	9	21.6	.....	51	2	−21	23	48	1.92	.....	0.55	26.0	10	13	7	11	sw.	Prof. C. B. Towle.
Angiola	Tulare	208	13	46.4	0.0	69	27	5	6	42	0.67	− 0.83	0.65	0	3	23	0	8	n.	Santa Fe Co.
Antioch**	Contra Costa	46	34	50.0	+ 3.5	79	26	23	6	....	2.74	+ 0.25	1.03	T.	8	19	0	12	.....	Southern Pacific Co.
Aptos**	Santa Cruz	102	28	45.7	− 2.8	62	2	27	7	....	5.11	− 0.41	1.40	0	9	17	0	14	nw.	Do.
Arrowhead Springs	San Bernardino	2,000	4	50.4	.....	79	3	22	5	34	3.00	.....	1.40	3.0	3	25	2	4	.....	Dr. E. J. Erekson.
Auburn	Placer	1,360	42	41.9	− 3.7	67	28	20	6	27	4.34	− 2.17	1.00	3.0	9	20	2	9	se.	Southern Pacific Co.
Avalon	Los Angeles	30	3	52.6	.....	74	3	34	7	20	1.34	.....	0.59	0	5	26	4	1	n.	T. S. Manning.
Azusa	do	540	11	50.2	− 2.8	88	3	20	7	43	2.02	− 1.89	0.95	0	4	25	3	3	sw.	A. P. Griffith.
Bagdad	San Bernardino	784	10	48.7	− 4.7	74	30	10	7	30	0.00	− 0.33	0.00	0	0	....	....	....	.....	Santa Fe Co.
Bakersfield	Kern	404	24	44.8	− 2.6	71	31	14	7	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Barstow	San Bernardino	2,105	10	45.4	− 2.4	75	29	12	7	41	0.30	− 0.32	0.20	2.0	2	27	0	4	w.	E. L. White.
Berkeley	Alameda	317	26	46.2	− 1.3	68	31	28	6	36	3.78	− 1.60	0.82	T.	11	15	5	11	s.	State University.
Betteravia	Santa Barbara	.....	.....	46.8	.....	76	3	8	5	52	2.74	.....	1.32	0	6	.....	.....	.....	.....	
Biggs**	Butte	98	14	39.7	− 7.2	65	1†	17	6†	....	3.08	− 1.15	0.70	3.0	9	18	3	10	s.	Southern Pacific Co.
Bishop	Inyo	4,450	18	31.3	− 7.4	68	2	0	6†	50	1.25	− 0.22	0.80	12.5	4	27	0	4	n.	Paul E. Lodge.
Bishop Creek	do	8,500	3	24.6	.....	51	3	−12	6	35	4.52	.....	2.10	45.2	7	.....	.....	.....	.....	Do.
Blocksburg	Humboldt	1,700	7	39.0	.....	69	31	16	6	39	15.60	.....	3.25	26.0	14	8	4	19	se.	Victor Hope.
Blue Canon	Placer	4,695	14	34.1	− 4.2	60	4	7	5	48	12.31	− 1.32	2.40	117.0	12	19	1	11	s.	Southern Pacific Co.
Blythe	Riverside	268	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. L. Suits.
Branscomb	Mendocino	2,000	13	41.2	− 1.7	77	31	19	5†	38	20.47	+ 1.31	4.70	16.5	11	17	5	9	n.	A. J. Haun.
Brawley	Imperial	−105	4	48.7	.....	81	30	21	8†	45	T.	.....	T.	0	0	30	0	1	.....	M. D. Witter.
Burney	Shasta	3,300	3	29.1	.....	57	26	3	11	43	4.95	.....	1.37	27.0	10	13	6	12	sw.	Mrs. M. D. Chambers.
Cahuilla	Riverside	3,600	2	38.0	.....	75	3	0	15	49	0.62	.....	0.60	6.0	2	23	7	1	e.	Dr. W. L. Shawk.
Calexico	Imperial	0	8	49.5	.....	77	30	21	7	40	T.	.....	T.	0	0	29	0	2	nw.	J. E. Peck.
Caliente**	Kern	1,290	37	42.7	− 6.7	62	30	19	6	....	1.30	− 0.47	0.55	T.	3	12	2	17	e.	Southern Pacific Co.
Calistoga**	Napa	363	41	44.8	− 3.3	70	30	27	11	....	9.03	− 0.65	1.83	0	9	15	0	16	nw.	Do.
Campbell	Santa Clara	217	16	44.2	− 3.4	68	31	21	7	33	2.04	− 0.66	0.79	0	7	18	3	10	nw.	F. M. Righter.
Camptonville (near)	Yuba	3,500	6	39.6	.....	68	31	10	6	32	12.54	.....	2.01	55.0	12	18	0	13	n.	Cal. Gas & Electric Co.
Cedarville	Modoc	4,675	19	22.8[4]	− 7.7	51	3	− 5	6†	36	1.66	− 0.35	0.37	25.8	9	7	24	0	sw.	T. H. Johnstone.
Chico	Butte	189	43	42.3	− 4.6	69	30	13	6	37	4.53	− 0.20	0.71	6.0	10	18	0	13	n.	G. H. Stephenson.
China Flat	Humbolt	600	4	39.8	.....	59	30†	16	6	27	13.46	.....	2.40	9.0	11	12	6	13	w.	O. I. Westerburg.
Chino	San Bernardino	714	21	43.4	− 7.7	68	27†	16	7†	....	1.00	− 2.96	0.80	0	2	26	0	5	.....	Southern Pacific Co.
Cisco**	Placer	5,939	42	30.1	− 0.6	50	2	6	5	....	11.20	+ 1.78	1.80	112.0	13	18	0	13	e.	Do.
Claremont	Los Angeles	1,200	21	48.8	− 2.2	84	3	19	7	41	1.96	− 1.96	0.96	0	6	20	6	5	w.	Prof. F. P. Bracket.
Cloverdale	Sonoma	340	11	46.0	− 1.4	77	31	22a	6†	42a	9.82	− 2.01	2.00	0	12	19	4	8	n.	John O. Ogle.
Coalinga	Fresno	663	1	46.2	.....	68	30	15	7	37	1.08	.....	0.73	0	5	19	8	4	w.	Union Oil Co.
Colfax	Placer	2,421	42	32.4	−12.0	66	4	8	10	36	2.58	− 6.72	0.40	15.0	11	21	0	10	n.	Southern Pacific Co.
Colusa	Colusa	60	10	43.5	− 2.5	71	31	23	6	33	2.62	− 0.88	0.75	2.4	7	22	0	9	n.	C. D. McComish.
Corning**	Tehama	277	27	44.8	− 0.4	68	28†	27	5†	....	4.27	+ 0.28	1.31	3.2	11	17	2	12	n.	Southern Pacific Co.
Cuyamaca	San Diego	4,677	14	34.8	− 2.3	68	3	2	10	31	5.38	− 1.60	1.97	0	4	20	3	8	e.	Cuyamaca Water Co.
Davisville	Yolo	51	41	42.5	− 5.1	70	31	20	7	39	3.43	− 0.27	0.95	T.	8	20	2	9	n.	S. H. Beckett.
Deer Creek	Nevada	3,700	6	32.4	.....	60	25	2	6	32	13.32	.....	2.70	84.0	12	18	0	13	w.	Cal. Gas & Electric Co.
Del Monte	Monterey	25	2	47.3	.....	68	27†	20	6	30	2.97	.....	0.98	0	7	18	0	13	nw.	H. R. Warner.
Delta	Shasta	1,138	28	42.0	− 1.3	65	29†	15	6	30	10.06	− 1.23	4.00	29.0	9	19	0	12	n.	Southern Pacific Co.
Denair	Stanislaus	126	13	39.8	− 6.6	62	31	16	6	29	1.26	− 0.91	0.64	T.	3	12	0	19	nw.	Santa Fe Co.
De Sabla	Butte	2,500	9	37.6	.....	69	31	9	6	35	14.82	.....	2.73	48.5	11	17	2	12	n.	Cal. Gas & Electric Co.
Dobbins (near)	Yuba	1,650	9	45.4	.....	76	31	22	6	32	8.08	.....	1.98	7.5	12	18	1	12	s.	Do.
Downieville	Sierra	3,150	2	34.6	.....	60	31	1	10	37	13.14	.....	2.58	64.5	13	17	3	11	s.	J. T. Mason.
Dudley	Kings	595	1	44.7	.....	67	27†	16	6	35	0.85	.....	0.60	0	3	14	4	13	n.	Union Oil Co.
Dudleys	Mariposa	3,000	4	36.2	.....	66	3	2	11	39	5.40	.....	1.89	16.2	10	19	2	10	n.	W. H. Dudley.
Dunlap (near)	Fresno	2,800	1	38.3	.....	69	27	9	5	37	4.96	.....	2.04	10.9	6	12	4	15	.....	U. S. Forest Service.
Dunnigan**	Yolo	65	36	47.5	− 1.2	64	2†	28	6	....	2.76	− 1.82	0.75	2.0	9	18	1	12	n.	Southern Pacific Co.
Dunsmuir**	Siskiyou	2,285	24	34.7	− 4.7	58	3	17	6	....	12.87	+ 1.69	3.25	64.0	11	16	0	15	n.	Do.
Durham	Butte	160	18	41.4	− 3.9	72	31	13	6	38	4.91	− 0.52	1.82	7.0	7	18	2	11	n.	R. W. Durham.
El Cajon	San Diego	482	14	49.4	− 3.9	85	2†	19	8	51	1.50	− 0.93	0.62	0	5	26	4	1	w.	H. H. Kessler.
Electra	Amador	725	9	43.0	.....	76	3	15	6	46	6.90	.....	2.53	1.0	9	22	1	8	.....	Cal. Gas & Electric Co.
Elsinor	Riverside	1,234	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. F. Schult.
Emigrant Gap	Placer	5,230	39	32.9	− 2.0	58	2	5	6	28	7.85	− 3.26	1.50	78.5	10	19	3	9	.....	Southern Pacific Co.
Escondido	San Diego	657	19	46.9	− 2.6	82	2	13	7	43	1.79	− 2.07	0.61	0	5	9	21	1	w.	A. R. Moon.
Eureka	Humboldt	64	27	42.7	− 4.2	57	31	28	6	18	8.10	+ 0.51	2.62	0	15	6	13	12	se.	U. S. Weather Bureau.
Farmington**	San Joaquin	111	34	41.9	− 3.8	64	31	14	7	....	2.98	− 0.12	1.04	T.	9	17	5	9	se.	Southern Pacific Co.
Folsom	Sacramento	252	41	43.2	− 3.9	64	31	24	6	27	4.25	− 0.46	0.82	2.0	11	18	0	13	n.	F. O. Hutton.
Fordyce Dam	Nevada	6,500	18	31.0	.....	56	31	0	10	34	12.99	− 2.22	3.05	129.0	13	16	5	10	sw.	E. E. Roening.
Fort Bidwell	Modoc	4,735	24	22.8	− 7.0	46	3†	− 9	6	36	2.20	− 2.04	0.60	22.0	8	13	4	14	sw.	C. R. Decious.
Fouts Springs	Colusa	1,650	9	39.2	.....	73	31	10	6	41	10.40	.....	2.05	24.0	15	.....	.....	.....	.....	A. J. Burgi.
Fresno	Fresno	293	26	44.5	− 0.9	67	31	17	6	27	1.22	− 0.10	0.62	T.	6	13	7	11	e.	U. S. Weather Bureau.
Galt**	Sacramento	49	35	44.0	− 3.3	70	31	26	5	....	3.13	− 0.54	1.13	1.0	9	9	1	21	s.	Southern Pacific Co.
Georgetown	Eldorado	2,650	40	35.2[5]	−11.2	66	28	14	6	29	6.51	− 4.28	1.87	26.0	8	.....	.....	.....	.....	G. L. Buchler.
Gilroy**	Santa Clara	193	39	43.6	− 2.9	65	2†	20	6	....	4.68	+ 0.12	1.22	0	10	14	4	13	se.	Southern Pacific Co.
Gilta	Siskiyou	3,300	3	42.2	.....	70	4	14	5†	47	11.13	.....	1.90	99.0	15	11	11	9	.....	A. Dannenbrink.
Glennville	Kern	3,300	3	38.3	.....	66	27	9	6	33	2.21	.....	0.81	5.0	6	14	7	10	w.	C. H. Likely.
Gold Run	Placer	3,222	14	39.0	− 4.0	65	4†	14	5	37	11.85	+ 2.15	2.00	49.0	7	17	3	11	e.	Southern Pacific Co.
Gonzales**	Monterey	127	14	48.0	+ 0.3	67	26	16	6	....	2.61	− 0.49	1.02	0	7	22	1	8	n.	Do.
Grass Valley	Nevada	2,690	41	38.9	.....	68	31	11	6	27	9.88	− 0.59	1.90	15.5	11	19	1	11	sw.	Mrs. L. M. Wentworth.
Greenland Ranch	Inyo	178	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. W. Corkhill.
Greenville	Plumas	3,600	19	33.1	− 0.5	55	31	9	5†	35	8.38	− 1.33	2.60	65.0	11	15	5	11	e.	C. H. Higbie.
Groveland	Tuolumne	2,828	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. S. Richardson.
Guinda**	Yolo	350	15	39.6	− 3.4	56	1	21	6	....	5.23	− 0.95	1.19	1.0	9	15	6	10	n.	Southern Pacific Co.
Hanford	King	249	13	42.8	− 3.6	68	30	14	6†	37	1.26	− 0.75	0.62	0	7	8	18	5	.....	Santa Fe Co.
Healdsburg	Sonoma	110	20	45.0	− 1.0	70	31	19	6	34	11.03	+ 0.98	2.11	0	11	18	0	13	n.	Dr. F. J. Kinley.
Hearst	Mendocino	1,800	3	33.0	.....	56	26†	14	6	28	9.29	.....	2.15	13.0	8	18	0	13	ne.	H. D. Ellmaker.
Heber	Imperial	−20	7	48.1	.....	78	26†	18	8	44	0.09	.....	0.06	0	2	15	16	0	nw.	F. E. Hamilton.
Hetch Hetchy	Tuolumne	3,665	3	30.9[6]	.....	56	29	3	11	30[6]	3.59	.....	1.37	28.2	11	.....	.....	.....	se.	E. J. Kopplitz.
Hollister	San Benito	284	39	44.8	− 4.0	69	26	18	6	35	2.35	− 0.36	0.61	0	9	15	5	11	n.	J. N. Thompson.
Hornbrook**	Siskiyou	2,154	25	31.0	− 4.4	48	3	− 1	10	....	2.73	+ 0.05	1.40	27.0	7	4	0	27	s.	Southern Pacific Co.
Hot Springs	Tulare	3,300	6	38.6	.....	64	27	12	6	28	3.61	.....	1.10	7.5	6	15	8	8	.....	U. S. Forest Service.
Hullville	Lake	2,250	6	39.8	.....	75	31	16	5	37	14.52	.....	2.70	39.6	13	6	13	12	sw.	T. H. Betterton.

TABLE 1.—*Climatological data for January, 1913. District No. 11*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Continued.																				
Independence	Inyo	3,907	17	33.8	− 6.7	65	1	4	7†	35	0.33	− 0.89	0.22	.....	2	16	13	2	.....	U. S. Weather Bureau.
Indian Wells	Kern	2,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	I. D. McCoy.
Indio	Riverside	−20	35	49.9	− 3.0	85	26†	16	8	46	0.12	− 0.64	0.12	0	1	23	7	1	nw.	F. N. Johnson.
Inskip	Butte	4,975	6	34.0	.....	62	31	6	5	24	18.59	.....	4.03	85.5	12	14	3	14	.....	Cal. Gas & Electric Co.
Ione**	Amador	287	35	42.4	− 4.2	66	28	14	6	....	4.01	+ 0.59	1.20	0	9	20	1	10	nw.	Southern Pacific Co.
Jamestown	Tuolumne	1,471	10	40.8	− 4.2	66	28	12	6	31	5.70	− 3.20	1.85	T.	6	18	0	13	.....	Sierra Railway Co.
Kennett	Shasta	730	1	40.9	.....	74	26	15	6	33	13.64	.....	3.48	20.5	12	13	9	9	n.	O. J. Egleston.
Kentfield	Marin	65	25	44.0	.....	71	31	24	7	37	12.07	− 1.26	3.78	4.5	11	11	7	13	.....	Miss M. E. Parsons.
King City	Monterey	333	26	52.4	+ 4.5	82	29	14	6	59	1.54	− 0.86	0.93	0	6	25	0	6	n.	Southern Pacific Co.
Lake Eleanor	Tuolumne	4,700	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. J. Todd.
La Porte	Plumas	5,000	19	30.9	− 2.6	60	25†	5	5	32	9.39	− 8.45	1.55	93.9	13	17	3	11	n.	Chas. W. Hendel.
Le Grand	Merced	255	13	41.4	− 4.6	64	31	11	7	31	1.40	− 1.03	0.67	T.	4	17	1	13	w.	Santa Fe Co.
Lemon Cove	Tulare	600	18	47.8	− 0.6	73	28	18	6	43	1.70	− 1.43	0.72	1.0	4	19	3	9	n.	G. W. Sandidge.
Lick Observatory	Santa Clara	4,209	24	36.6	− 3.3	63	2	11	5	24	5.42	− 0.14	1.77	.....	12	17	3	11	n.	The Director.
Livermore	Alameda	485	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. G. Still.
Lodi	San Joaquin	45	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ezra Fiske
Lone Pine	Inyo	2,728	8	36.8	.....	67	2	4	7	46	0.37	.....	0.27	1.5	2	20	10	1	n.	G. F. Marsh.
Long Valley	Lassen	4,400	4	25.9	.....	57	3	− 5	6	36	1.29	.....	0.53	17.0	5	10	4	17	se.	A. G. Evans.
Los Angeles	Los Angeles	293	36	52.0	− 1.1	83	3	28	7	32	2.01	− 0.92	1.03	0	7	19	5	7	ne.	U. S. Weather Bureau.
Los Banos**	Merced	121	26	48.6	− 0.2	60	17†	23	7	....	1.64	− 0.02	0.80	0	6	19	0	12	n.	Southern Pacific Co.
Los Gatos	Santa Clara	600	26	45.3	− 2.4	69	31	25	5†	25	6.88	− 0.21	1.68	0	9	18	2	11	n.	F. H. McCullagh.
McCloud	Siskiyou	3,410	3	30.5	.....	53	30†	0	6	31	10.80	.....	2.18	74.5	11	18	5	8	.....	F. F. Spencer.
Macdoel	....do	4,528	8	18.5	.....	40	13	− 15	23	35	2.88	.....	0.78	28.8	11	.....	.....	.....	.....	Butte Valley Land Co.
Madeline	Lassen	5,270	4	20.8	.....	48	2	− 12	6†	53	1.70	.....	0.50	17.5	11	10	8	13	n.	J. H. Williams.
Magalia	Butte	2,321	9	40.8	.....	71	30	12	5	35	15.87	.....	4.31	25.0	9	19	1	11	nw.	Butte Co. R. R. Co.
Mammoth Tank	Imperial	257	35	50.4	− 3.5	82	26†	21	9	40	0.00	− 0.16	0.00	0	0	25	2	4	nw.	Southern Pacific Co.
Maricopa	Kern	640	2	44.0	.....	67	30	18	5	36	0.50	.....	0.26	0	7	14	9	8	n.	Union Oil Co.
Marysville	Yuba	67	42	43.4	− 5.0	71	31	21	10	35	3.05	− 0.66	0.81	3.0	7	18	0	13	s.	Southern Pacific Co.
Mecca	Riverside	−185	7	47.0	.....	80	31	13	8	44	T.	.....	T.	0	0	21	10	0	e.	E. A. Palmer.
Menlo Park**	San Mateo	64	35	42.2	− 5.1	60[b]	31	28[a]	6	23[b]	3.19	− 0.03	0.61	0	9	.....	.....	.....	n.	Southern Pacific Co.
Merced	Merced	173	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Santa Fe Co.
Middlewater	Kern	803	2	45.1	.....	66	30	16	7	33	0.63	.....	0.61	0	3	13	5	13	s.	Union Oil Co.
Mill Creek (1)	Amador	.....	6	37.6	.....	68	31	10	6	37	10.14	.....	3.07	32.0	10	17	2	12	n.	Cal. Gas & Electric Co.
Milton (near)	Calaveras	660	22	44.0	− 3.0	62	31	20	6	19	4.49	− 0.24	2.02	T.	8	15	3	13	se.	J. H. Southwick.
Modesto**	Stanislaus	90	41	43.6	− 3.0	68	30	22	6	....	1.76	− 0.27	1.00	T.	3	13	0	18	.....	Southern Pacific Co.
Mojave	Kern	2,751	36	46.3	+ 1.0	70	3†	10	6	36	0.35	− 0.61	0.25	1.0	2	19	7	5	s.	Do.
Mokelumne Hill	Calaveras	1,550	20	43.1	− 0.5	68	28	18	6	24	6.16	− 0.76	2.42	6.0	8	17	1	13	.....	C. E. Prindle.
Mono Ranch	Ventura	3,210	7	37.6	.....	64	2†	1	6	33	8.16	− 0.24	5.40	1.0	4	22	5	4	w.	Herbert Lathrop.
Montague	Siskiyou	2,450	25	28.8	− 6.4	46	2†	− 2	10†	36	0.83	− 0.91	0.21	8.8	13	5	12	14	s.	I. E. Deboy.
Monterey	Monterey	15	48	48.4	− 1.8	64	29†	24	6	....	3.43	− 0.14	1.03	0	7	23	3	5	e.	Southern Pacific Co.
Monterio	Kern	4,500	14	36.9	− 9.6	62	28†	4	6	24	1.72	− 0.90	1.00	0	5	13	8	10	.....	John C. Knecht.
Mount Tamalpais	Marin	2,375	14	41.2	− 4.7	61	29	22	5	19	4.57	− 0.65	0.82	5.7	11	18	3	10	ne.	U. S. Weather Bureau.
Napa City	Napa	20	36	43.5	− 1.2	68	27	24	4	40	4.54	.....	0.94	T.	10	3	22	6	s.	Alex. Hull.
Napa (S. H.)	....do	60	35	47.4	− 0.5	67	31	35	7†	30	4.53	− 0.61	0.97	0	11	16	2	13	se.	A. R. Edgar.
Needles	San Bernardino	477	21	46.7	− 6.1	78	29	24	7	36	0.23	− 0.22	0.23	0	1	23	2	6	w.	Santa Fe Co.
Nellie	San Diego	5,350	4	.....	.....	70	3	.....	.....	.....	4.45	.....	2.05	17.0	3	26	0	5	.....	T. O. Bailey.
Nevada City	Nevada	2,850	21	37.9	− 3.6	77	31	4	6	48	8.76	− 1.84	1.88	22.5	13	18	2	11	s.	S. W. Marsh.
Newhall **	Los Angeles	1,200	36	45.0	− 2.9	78	31	10	8	....	4.62	+ 1.69	3.23	0	5	21	0	10	se.	Southern Pacific Co.
Newman	Stanislaus	91	24	44.8	− 2.9	70	29	17	7	30	1.87	− 0.23	0.94	T.	6	.....	.....	.....	.....	E. S. Wangenheim.
North Bloomfield	Nevada	3,214	16	43.1	+ 1.3	67	25	22	6	26	6.30	− 3.90	1.50	43.0	8	18	1	12	n.	J. R. McIntosh.
North Fork	Madera	3,000	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Forest Service.
Oakdale **	Stanislaus	156	19	44.0	− 0.7	66	29	22	6	....	2.58	− 0.51	0.64	T.	9	18	6	7	s.	Southern Pacific Co.
Oak Grove	San Diego	2,751	3	42.3	.....	73	25	9	5†	37	2.41	.....	1.08	5.5	4	22	5	4	e.	B. L. Johnson.
Oakland	Alameda	36	37	45.6	− 2.0	63	31	30	6	20	3.53	− 1.52	0.79	T.	10	14	5	12	n.	Chabot Observatory.
Oceanside	San Diego	60	3	49.6	.....	73	3†	21	7	32	1.44	.....	0.56	0	5	23	4	4	w.	H. D. Brodie.
Ojai Valley	Ventura	900	7	49.2	.....	85	3	13	6†	49	4.36	.....	2.60	0	4	23	4	4	sw.	W. H. Duncan.
Orland	Glenn	254	31	43.2	− 4.4	72	31	25	5	34	3.50	− 0.04	1.08	T.	11	16	5	10	n.	U. S. Reclamation Service.
Orleans	Humboldt	520	10	43.8	− 2.8	68	31	20	6	38	11.10	+ 0.59	1.95	9.0	13	15	3	13	.....	F. T. Hale.
Oroville (near)	Butte	250	29	42.6	− 4.2	70	30†	15	10	33	5.51	+ 0.03	1.07	6.0	11	19	0	12	nw.	E. D. Fairchild.
Palermo	....do	213	22	44.8	− 0.6	71	31	16	4	34	3.60	− 1.44	1.00	6.0	5	19	6	6	n.	Western Pacific Co.
Palm Springs **	Riverside	584	24	49.3	− 6.7	84	24†	18	7†	....	0.70	− 0.04	0.65	T.	2	22	3	6	w.	Southern Pacific Co.
Pasadena	Los Angeles	827	23	49.0	− 3.7	85	3	21	7	41	3.13	− 1.00	1.41	0	6	20	7	4	sw.	E. D. Sorver.
Paso Robles	San Luis Obispo	800	26	43.8	− 1.6	73	28†	0	6	48	4.37	+ 0.99	1.67	0	8	19	5	7	n.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	17	44.2	− 2.6	74	31	21	6	37	11.49	+ 1.12	3.75	T.	12	18	7	6	s.	E. H. Parnell.
Petaluma	....do	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Placerville	El Dorado	1,875	24	38.4	− 3.2	60	27†	10	6	32	6.67	− 1.56	1.75	4.0	8	.....	.....	.....	.....	A. E. May.
Point Lobos	San Francisco	250	20	47.2	− 2.5	65	31	34	5†	19	3.56	− 0.54	0.94	T.	11	15	4	12	ne.	John Hyslop.
Point Reyes	Marin	490	21	46.4	− 3.1	63	2	33	5	18	2.79	− 2.23	0.65	0	11	13	6	12	nw.	U. S. Weather Bureau.
Pomona	Los Angeles	.....	.....	46.9	.....	85	3	21	7	50	2.78	.....	1.10	0	5	18	1	12	.....	J. E. Adamson.
Porterville	Tulare	464	24	45.6	− 2.4	77	31	18	7	42	1.12	− 0.73	0.58	0	6	17	4	10	.....	Leslie McAuliff.
Quincy	Plumas	3,400	18	25.8	− 7.5	45	3	0	11	30	5.66	− 4.29	1.63	46.0	11	17	0	14	s.	U. S. Forest Service.
Red Bluff	Tehama	307	36	43.6	− 1.8	72	31	25	10	28	5.00	+ 0.33	1.54	8.0	11	17	1	13	nw.	U. S. Weather Bureau.
Redding	Shasta	552	38	44.1	− 1.1	76	31	18	9	36	7.02	− 0.75	1.91	18.8	9	17	6	8	nw.	W. W. Jones.
Redlands	San Bernardino	1,352	20	49.0	− 2.0	82	3	18	7	40	1.10	− 1.72	0.63	0	5	21	7	3	w.	W. S. Devol.
Reedley	Fresno	347	13	43.7	− 4.0	66	30†	17	7	32	1.37	− 0.88	0.50	0	6	19	0	12	n.	Santa Fe Co.
Rialto (near)	San Bernardino	2,250	7	50.2	.....	80	3	22	6	24	4.88	.....	2.34	3.0	5	21	6	4	n.	Southern Cal. Edison Co.
Riverside	Riverside	851	31	50.4	− 0.7	87	3	21	6	50	0.91	+ 1.10	0.37	0	5	21	7	3	sw.	J. H. D. Cox.
Rocklin	Placer	249	42	42.4	− 4.2	66	30	20	12	36	4.00	− 0.45	1.00	3.0	7	20	0	11	nw.	Southern Pacific Co.
Rohnerville	Humboldt	75	10	43.2	.....	62	24†	23	6	28	8.65	− 0.09	2.60	T.	13	14	6	11	se.	Dr. R. Callahan.
Sacramento	Sacramento	71	36	44.1	− 1.5	66	31	26	6	29	2.52	− 1.30	1.06	0.1	10	19	1	11	se.	U. S. Weather Bureau.
St. Helena	Napa	255	5	44.6	.....	78	31	24	7	35	9.28	.....	1.90	T.	11	18	0	13	.....	E. E. Hooper.
Salinas	Monterey	40	39	47.4	− 0.8	70*	31	19	6	33	2.44	− 0.51	0.74	0	9	15	12	4	se.	Miss E. Ruth Abbott.
San Bernardino	San Bernardino	1,054	21	49.2	− 2.3	87	3	18	7	52	1.69	− 1.64	0.58	0	5	22	6	3	n.	Dr. A. K. Johnson.
San Diego	San Diego	93	42	50.6	− 3.4	78	3	25	7	27	1.19	− 0.83	0.80	0	5	17	11	3	nw.	U. S. Weather Bureau.
San Francisco	San Francisco	207	42	47.4	− 2.1	68	31	33	6	20	3.84	− 0.91	1.13	T.	10	14	7	10	ne.	Do.
San Jacinto	Riverside	1,550	20	50.0	− 0.1	88	3	7	7	52	1.07	− 1.67	0.43	0	4	24	2	5	w.	E. T. Tanner.
San Jose	Santa Clara	95	38	45.2	− 3.1	70	31	25	7	34	2.29	− 0.45	0.93	0	8	18	2	11	se.	U. S. Weather Bureau.
San Luis Obispo	San Luis Obispo	201	18	48.6	− 2.4	77	2	20	6	34	3.48	− 1.16	1.62	0	8	16	4	11	n.	Do.
San Mateo **	San Mateo	22	39	50.4	+ 2.5	68	31	32	5†	....	4.78	+ 0.28	1.47	0	9	19	8	4	e.	Southern Pacific Co.
San Miguel	San Luis Obispo	616	26	45.4	− 1.3	67	31	11	7	....	2.09	− 0.23	1.11	0	6	16	8	7	.....	Do.
San Miguel Island	Santa Barbara	500	19	50.5	.....	72	3	31	7	22	1.65	− 1.82	0.80	0	3	21	4	6	w.	Capt. W. G. Waters.
Sanger **	Fresno	371	24	41.9	− 7.0	65	31	20	5†	....	.....	.....	.....	.....	.....	25	2	4	.....	Southern Pacific Co.
Santa Barbara	Santa Barbara	130	29	49.4	− 4.4	78	2	27	6	33	3.14	− 0.92	1.50	0	6	19	6	6	w.	G. W. Russell.
Santa Clara	Santa Clara	90	24	45.6	− 2.5	72	31	23	7	37	2.63	− 0.38	0.78	0	9	18	1	12	nw.	Santa Clara University.
Santa Cruz	Santa Cruz	20	40	46.0	− 5.1	71	2	24	7	44	5.57	+ 0.03	1.35	0	11	17	3	11	n.	W. R. Springer.
Santa Margarita **	San Luis Obispo	996	24	43.9	− 2.0	70	14	5	6	.....	5.59	− 1.24	2.65	0	7	9	4	18	s.	Southern Pacific Co.

TABLE 1.—*Climatological data for January, 1913. District No. 11*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Continued.																				
Santa Monica	Los Angeles	110	28	48.4	−5.4	75	2	26	7	27	2.07	−1.21	1.19	0	6	22	5	4	w.	F. E. Hill.
Santa Rosa	Sonoma	181	24	44.3	−3.2	69	31	26	7	34	6.11	−0.74	1.33	0	11	16	3	12	s.	Southern Pacific Co.
Selma **	Fresno	311	27	39.3	−6.4	60	1	12	7	....	1.34	+0.40	0.63	0	6	23	1	7	.....	Do.
Seven Oaks	San Bernardino	5,000	3	36.6	.....	69	3	7	6	42	2.10	.....	0.58	21.0	4	26	1	4	n.	M. Lewis.
Sierra Madre	Los Angeles	1,400	16	50.0	−3.4	78	3	28	6	26	3.99	−1.02	2.91	0	4	20	5	6	s.	Mrs. A. E. Gregory.
Sierraville	Sierra	5,000	3	22.0	.....	57	2	− 7	19	44	4.20	.....	1.70	42.0	6	15	5	11	s.	C. D. Johnson.
Sisson	Siskiyou	3,555	24	27.2	−6.8	47	4	− 9	5	30	7.55	−0.06	1.60	74.0	10	15	2	14	s.	Southern Pacific Co.
Soledad **	Monterey	188	39	47.6	−0.5	70	26	23	6	....	2.50	+0.48	1.05	0	6	16	0	15	s.	Do.
Sonora	Tuolumne	1,825	25	41.6	.....	64	27	14	6	30	5.38	−1.26	1.63	5.0	9	15	4	12	sw.	Chas. P. Jones.
Southeast Farallon	San Francisco	30	10	48.4	−2.6	57	27	39	6	11	2.51	.....	0.68	0	12	15	4	12	nw.	U. S. Weather Bureau.
Springville	Tulare	4,000	6	38.1	.....	67	3	7	6	38	1.90	.....	.....	14.0	8	16	0	15	.....	D. L. Wishon.
Squirrel Inn	San Bernardino	5,280	3	33.3	.....	62	3	5	6	31	4.61	.....	1.60	15.0	4	22	3	6	n.	A. D. Frantz.
Stanwood	Butte	2,140	9	34.0	.....	54	21†	10	13	31	12.19	.....	3.17	16.0	6	24	0	7	n.	Cal. Gas & Electric Co.
Stirling City	do	3,525	9	37.4	.....	72	27†	10	6†	41	19.20	.....	4.05	47.0	13	11	6	14	se.	Butte County R. R. Co.
Stockton (S. H.)	San Joaquin	23	42	42.6	−3.9	62	29	21	6	29	2.40	−0.46	1.23	T.	9	20	0	11	se.	State Hospital.
Storey	Madera	296	13	42.4	−2.8	72	1	14	6	32	0.75	−0.98	0.37	0	4	25	0	6	.....	Santa Fe Co.
Suisun **	Solano	20	33	47.9	+0.7	74	2	29	20	....	3.47	−0.87	0.87	0.1	9	19	2	10	n.	Southern Pacific Co.
Sulphur Banks	Lake	1,350	1	40.8	.....	71	31	23	10†	38	4.89	.....	1.12	11.2	11	19	6	6	w.	L. S. Lorenzen.
Summit	Placer	7,017	40	23.8	−4.2	46	2	− 4	5	27	13.60	+4.82	2.80	13.6	11	18	0	13	s.	Southern Pacific Co.
Susanville	Lassen	4,175	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. M. Penry.
Tamarack	Alpine	8,000	7	18.8	.....	42	30	−20	5	47	14.56	−0.28	1.93	165.0	13	10	8	13	sw.	Cal. Gas & Electric Co.
Tehachapi **	Kern	3,964	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.
Tehama	Tehama	220	42	44.5	−2.5	70	31	29	10†	....	5.66	−1.75	2.30	3.5	8	20	0	11	n.	Do.
Tejon Rancho	Kern	1,500	10	.....	.....	.....	.....	.....	.....	.....	2.00	+0.42	0.75	T.	5	.....	.....	.....	.....	S. E. Bailey.
Three Rivers	Tulare	870	3	42.6	.....	68	28	16	7	35	3.19	.....	1.30	T.	6	17	7	7	sw.	J. H. Pierce.
Towle	Placer	3,704	27	37.5	−2.8	77	2	8	5	47	14.75	+5.01	3.30	80.0	12	19	1	11	se.	Southern Pacific Co.
Tracy **	San Joaquin	64	33	40.2	−6.7	62	29†	18	6	....	1.38	−0.47	0.90	0	3	25	0	6	.....	Do.
Ukiah	Mendocino	620	20	41.8	−3.2	72	31	15	6	41	9.01	+0.66	1.33	T.	12	19	6	6	nw.	Dr. Geo. McCowen.
Upper Lake	Lake	1,350	28	40.4	−3.6	75	31	13	6	40	7.25	+0.83	1.24	T.	13	14	3	14	se.	C. M. Hammond.
Vacaville	Solano	175	25	42.9	−3.5	74	31	20	7	37	4.13	−1.86	0.78	0.1	10	17	5	9	n.	G. O. Coburn.
Valley Springs **	Calaveras	673	24	46.0	−0.8	66	31	18	6	....	4.28	+0.04	1.62	0	10	17	3	11	s.	Southern Pacific Co.
Visalia	Tulare	334	25	44.4	−1.2	68	2	13	5	36	1.06	−1.12	0.56	0	4	23	3	5	s.	Santa Fe Co.
Warner Springs	San Diego	3,165	5	44.2	.....	83	3	13	6	44	2.37	.....	1.18	6.5	4	23	5	3	.....	Mrs. F. S. Sandford.
Wasco	Kern	336	13	43.8	−1.7	65	31	18	6†	32	0.50	−0.56	0.25	0	2	16	6	9	nw.	Santa Fe Co.
Watsonville	Santa Cruz	23	17	47.6	−3.8	74	27	20	7	42	5.48	+0.55	1.55	0	9	15	4	12	w.	Spreckels Sugar Co.
Weaverville	Trinity	2,162	1	32.2	.....	56	31	7	19	38	8.74	+1.32	2.05	52.5	13	15	4	12	.....	U. S. Forest Service.
Weitchpec	Humboldt	1,700	3	35.6	.....	57	31	17	6	26	16.36	.....	3.22	38.5	19	16	5	10	nw.	M. E. Lathrop.
Westley **	Stanislaus	90	24	45.8	−2.0	66	30†	20	5†	....	1.68	−0.44	0.93	0	5	18	1	12	n.	Southern Pacific Co.
Wheatland	Yuba	84	26	42.2	−2.6	62	29†	20	10	27	3.95	−0.57	1.28	3.0	11	19	3	9	se.	Wm. Lumbard.
Willows	Glenn	136	34	43.3	−1.9	72	31	24	10†	34	3.37	−0.12	1.08	3.0	8	19	1	11	n.	E. C. Mills.
Yorba Linda	Orange	.....	....	50.2	.....	85	3	26	7	38	0.66	.....	0.48	0	2	20	9	2	w.	S. J. Walker.
Yosemite	Mariposa	3,945	9	26.8	.....	50	31	− 2	11	34	6.69	.....	2.53	47.0	9	18	2	11	s.	J. P. Kelly.

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 11, California.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon.																																	
Klamath Agency	Klamath							.40	.40			.90	.30	.40		.30		.80			.30												3.80
Klamath Falls	do			T.				.03	.32	.06	.05	.23	.16	.44	.31	.15	.33	.12	.83	.05		.13	.33		.03								3.57
Lakeview	Pitt			T.	T.			T.	.15	.05		.15			.19		.15	T.	.20			T.	.15										1.04
Merrill	Interior drainage.			T.	T.							.03		.20	.39	.06	.20		T.				.47										1.35
Vistillas	Pitt	.43							.48	.01		.28	.10	.02	.42	.28	.14	.48	.22			.10	.15										3.11
Yonna	Interior drainage.																																
California.																																	
Aguanga	Coast									.19		.48				.13		.81															1.61
Alturas	Sacramento							.02	.04	.02		.06	.02		.45	.10	.30		.36				.55										1.92
Angels Camp	San Joaquin								.25						1.84	.51	1.92	1.62	.94	.22			.18										7.48
Angiola	do														.02	*	.65																0.67
Antelope Valley	do									.07	.11					.14	1.13	.18															1.63
Antioch	do									.34		.15	.08			1.03	.38	.48	.16			.12											2.74
Aptos	Coast								.55		.20				1.10	1.40	.45	.60	.35	.28				.18									5.11
Arrowhead Springs	do									.80						1.40	.80																3.00
Auburn	Sacramento									.30		.02	.55	1.00		.45	.76	.60	.53	.09			.04										4.34
Avalon	Ocean									.59	.17					.44	.04	.10															1.34
Azusa	Coast																																12.02
Bagdad	Desert																																0.00
Bakersfield	San Joaquin																																
Barstow	Desert										.20			.10																			0.30
Bear River	San Joaquin																																
Bear Valley	do	.18								.39		.56					.71	.65															2.49
Bear Valley Dam	do									.50	.72					3.30	.35																4.87
Beaumont	do									.20	.20					.65	.13																1.18
Beaumont (near)	do										.42					1.00	.20																1.62
Belotta	do	.10												.18	.32	1.40	.40	.65	.20	.60			.10	.06									3.91
Ben Lomond	Coast								1.00	.47			.85	2.00	1.50	1.10	1.78	2.55	1.25				.18										12.68
Berkeley	do								.68	.11			.20	.04	.65	.82	.54	.27	.42				.04								.01		3.78
Betteravia	Ocean								.25	.44					.50	1.32	.18	.05															2.74
Biggs	Sacramento								.30			.36	.39	.40	.70	.15	.27	.40						.20									3.08
Bishop	Owens									.12	.03						.30	.80															1.25
Bishop Creek	do				.02					.45	.15					2.10	1.20	.10	.10	.40													4.52
Blocksburg	Coast	.13		T.				1.00	.45	.20	.35	.31	3.25	3.21	1.15	1.30	.70	1.52	1.63			T.	.40										15.60
Blue Canyon	Sacramento	.20						.20	1.30	.30			.40	.81	1.20	1.90	2.40	1.20	1.80	.60													12.31
Blythe	Desert																																
Boulder Creek	Coast	T.							1.12	.20		T.		.22	1.64	1.49	.76	1.44	1.51	.81			.11										9.30
Bowmans Dam	Sacramento								1.11	.50		.30	1.70		3.33	2.40	2.60	2.85	2.76	.15			.42										18.12
Branscomb	Coast							T.	2.05	.30		.47	2.60	4.70	1.27	1.75	1.76	1.37	3.47			.73											20.47
Brawley	Desert									T.																							T.
Burney	Sacramento	T.							.43	.03		T.	.23	.53	.46	.95	.50	.34	1.37				.11										4.95
Butte Valley	do																																
Cahuilla	Coast													.60			.02																0.62
Calexico	Desert									T.																							T.
Caliente	San Joaquin									.45	.30							.55															1.30
Calistoga	Coast								1.00				.93	1.13	1.78	1.07	.89	.33	1.83				.07										9.03
Campbell	Coast								.18	.17				.36	.20	.79	.13		.21				T.										2.04
Campo	do									*	1.25					.64	.73	.13															2.75
Camptonville (near)	Sacramento	.42							.62			.20	1.57	.96	2.01	2.00	1.20	1.10	1.98	.04			.54										12.54
Cedarville	M't'n Lakes	.10							.20					.06	.12	.24	.23	.04	.37				.30										1.66
Chester	Sacramento								.50	.10		.35	.30	.08	1.50	.95	1.40	.70	.40				.10										6.38
Chico	do								.60			.25	.71	.49	.65	.59	.45	.33	.37				.09										4.53
Chico (near)	do								*	.81		*	1.55	*	1.37		.49	.75	T.				.11										5.08
China Flat	Coast							.50	.60	.70	1.00		1.80	1.53	2.40	1.13	.81	2.33				.66											13.46
Chino	do															.80	.20																1.00
Cisco	Sacramento	.20							.20	1.00	.10		.40	.60	1.50	1.60	1.80	1.40	1.50	.40			.50										11.20
Claremont	Coast									.12	.19					.96	.19	.49	.01	T.				T.									1.96
Cloverdale	do								1.06	.04	.06	.06	2.00	1.81	1.12	1.15	1.00	.46	.90				.16										9.82
Coalinga	San Joaquin									.01	.11					.21	.73	.02															1.08
Colfax	Sacramento	.26							.30				.05	.28	.14	.30	.40	.40	.22	.18			.05										2.58
Colgate	do									.37			.63	.49	1.39	1.33	1.15	.54	.95	.25			.35	.10									7.55
Colusa	do								.24	T.				.40	.51	.75	.18	.32					.22										2.62
Corning	do								.34	.26		.37	1.31	.32	.64	.14	.28	.41	.08			.12											4.27
Corona	Coast																																
Cuyamaca	do									1.86	.90					1.97	.65																5.38
Davisville	Sacramento								.10	.04		T.			.92	.95	.65	.11	.48				.18										3.43
Deer Creek	do								1.22	.15		.12	1.00	.35	2.05	2.16	1.60	1.41	2.70	.19			.37										13.32
Del Monte	Coast								.35	.44					.16	.98	.55		.45				.04										2.97
Delta	Sacramento							1.10		.05	.05	.60	.50	1.71	1.80	.25	4.00																10.06
Denair	San Joaquin								T.					.64	T.	.53			.09														1.26
De Sabla	Sacramento							1.21				.04	1.70	2.38	2.73	1.05	1.75	1.28	2.23	.20			.25										14.82
Descanso	Coast									*	*	1.37				*	*	1.90															3.27
Devils Canyon	do									.22	.42					.78	1.45																2.87
Dinuba	San Joaquin																																
Dobbins	Sacramento	T.							.70	.10		.04	1.06	.19	1.56	1.98	.81	.30	.75	.16			.43										8.08
Downieville	do	.11			T.				.95	.12		.09	.95	.45	2.35	2.58	1.56	1.21	2.18	.30			.09										13.14
Dudley	San Joaquin									.18						.60	.07																0.85
Dudleys	do								.20	.45	.03				.31	1.89	.21	1.22	.81	.13			.05										5.40
Dunlap (near)	do									.49	.60				.58	2.04	1.10		.15														4.96
Dunnigan	Sacramento								.20					.35	.19	.75	.18	.58	.38				.05	.08									2.76
Dunsmuir	do				.50				1.00	.05			1.50	3.25	1.62	.20	.70	.55	3.20	.30		T.	T.										12.87
Durham	do								.70					1.82	1.31	.48			.50				.10										4.91
East Park	do								.35	.10			.37	.83	.14	.53	.35	.34	.37				.06										3.44
Edgewood	do				.05			.10					.40	.35		.30		.48															1.68
Edison	San Joaquin	.02							.16	.60	.28					.41	.65																2.12
El Cajon	Coast									.22	.62					.03	.52		.11														1.50
Electra	San Joaquin								.52	.15					1.20	2.53	1.15	.23	.70	.30			.12										6.90
Emigrant Gap	Sacramento								1.00	1.10		.20	.10		1.20	1.50	1.10	1.10	.60				.05										7.85
Escondido	Coast									.32	.61					.60	.15	.11															1.79
Eureka	do			0.05				.24	.85	.61		.29	.54	2.22	.92	.51	.50	.82	.28			.15	.11			.01							8.10
Fairmont	do																																
Farmington	San Joaquin								.01						.28	1.04	.61	.50	.10	.33		.04	.07										2.98
Felton	Coast	.25								1.15	.32		.27	.21	1.29	1.45	.59	1.13	1.39	.95													9.00
Firebaugh	San Joaquin								.05							.11	.47	.07		.06				.08										0.84
Folsom	Sacramento	.07							T.	.59				.06	.73	.82	.80	.52	.51	.23			.07	.05										4.25
Fordyce Dam	do	.08			T.				1.05	.32		.16	1.14	.35	2.03	2.65	3.05	1.18	.70	.06			.22										12.99
Fort Bidwell	M't'n Lakes				.10				.30			.10				.20	.60	.10	.40				.40	T.										2.20
Fort Bragg	Coast							1.24	.08	.12	.26	.91	1.40	1.69	.96	1.11	.19	.26				.27											8.49
Fort Ross	do								1.27	.14	.04	.20		2.12	1.68	.78	.65	.62	.66				.98										9.14

TABLE 2.—*Daily precipitation for January, 1913. District No. 11*—Continued.

Stations.	Watershed.	Day of month.																												Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Contd.																																	
Fouts Springs	Sacramento							.30	.70		.30	.20		2.05	.20	1.30	1.51	.60	.40	.82	.27	1.35	.20	.20									10.40
Fresno	San Joaquin								.24						.20	.55	.19		.03	.01			T.										1.22
Friant	do								.48						.40		.59	.77															2.24
Galt	do								.10						.20	1.13	.45	.68	.17		.10		.23	.07									3.13
Georgetown	do								.70					1.87	1.33	.76	.40	.20			1.15		.10										6.51
Gilroy	Coast	.02								.13	.09				.35	1.22	1.17	.89	.20	.48				.13									4.68
Gilta	do	.04						.18	1.45		.12	.65	.95	1.90	1.05	1.00	1.15	1.00	1.10			.03	.49		.02								11.13
Glendora	do																																
Glen Ranch	do									.36	.14						4.80	.38															5.68
Glennville	San Joaquin	.11								.23	.46					.81	.42			.18													2.21
Glenwood	Coast									.68	.28			.23	1.60	2.12	1.03	1.30	1.00	.91				.08									9.23
Gold Run	Sacramento	.80							T.	1.00			.20	1.80	.50	1.30	1.60	.60	2.00	1.30			.30	.45									11.85
Gonzales	Coast								.55	.05				.21	1.02	.21	.40	T.	.17														2.61
Grass Valley	Sacramento								.70	.10		.06	.89	.30	1.82	1.85	.50	1.67	1.90	.09													9.88
Greenland Ranch	Desert																																
Greenville	Sacramento				T.				.26	.09	T.	.10	.17	.25	1.65	2.60	2.34	.37	.35				.20										8.38
Gridley	do								.40		.35		.20	.22	.43	.63	.63	.13	.80				.10										3.89
Groveland	San Joaquin																																
Guinda	Sacramento								.22				.40	.58	.79	1.10	.50	.40	1.19				.05										5.23
Hanford	San Joaquin											.13	.14				.17	.62	.11			.05			.04								1.26
Head Dam	Sacramento	.02							.10			.06	1.97	.50	1.88	1.20	2.35	.95	1.03	.10			.54										10.70
Healdsburg	Coast								1.15	.14		1.92	2.11	1.85	1.00		.85	.49	1.30				.16	.06									11.03
Hearst	Coast								.28		.41		2.15	1.75		2.00	.40	.20	2.10														9.29
Heber	Desert									.06	.03																						0.09
Helen Mine	Coast										1.30		3.37	4.02	2.43	.95	.31	1.77	4.25				.39										18.79
Hetch Hetchy	San Joaquin	.04							.20	.30	.29	T.	.03		.33	1.37	.45	.10	.45					.03									3.59
Holcomb	Coast									.03	.70	T.				.07	2.05	T.															2.85
Hollister	do									.36	.23				.20	.38	.34	.61	.02	.15				.06									2.35
Hornbrook	Klamath			.03	.10			.30	1.40	.40			.10	T.				.40															2.73
Hot Springs	San Joaquin								.39		.73					1.00	1.10			.16	.23												3.61
Hullville	Coast							T.	1.57	.03	.05	.38	2.00	2.26	1.45	1.47	.98	1.21	2.70	.02			.40										14.52
Hyampom	do																																
Independence	Owens									T.	T.					.22	.11		T.														0.33
Indian Wells	Desert																																
Indio	do										T.						12																0.12
Inskip	Sacramento								1.16	.10		.59	1.60	2.14	2.50	1.74	*	3.80	4.03	.70			.23										18.59
Ione	San Joaquin									.46					.50	1.20	.46	.56	.23	.41			.05	.14									4.01
Jacksonville	do	.14								.25	.25				.05	.70	2.00	1.27	.24	.36				.15									5.41
Jamestown	do									.60					.70	1.85	1.35	.30	.90														5.70
Jenny Lind	do								.30						.60	1.55	.55	.55	.10	.45			.10	.10									4.30
Jolon	Coast									.05	.17				.32	1.16	.55	.38	.10				.05										2.78
Julian	do									.20	1.00						2.37	.31															3.88
Kennedy Mine	San Joaquin																																4.58‡
Kennett	Sacramento								.80	.05		1.10	*	*	*	*	*	*	11.31				.38										13.64
Kentfield	Coast								1.24	.54	.26	.08	3.78	1.30	.34	.87	.71	1.57	1.88														12.07
Kernville	San Joaquin																																
King City	Coast								.13	.06				.07		.93	.30	.05															1.54
Knights Landing	Sacramento								T.	.13	T.		T.	.05	.42	1.12	.28	.41	.38	T.			.06	.08									2.93
La Grange	do								.28						.52	1.12	.61	.04	.30	.10			.13										3.10
La Jolla										.51	.82					.61	.91	.17															3.02
Lake Eleanor	San Joaquin																																
Lakeside	Coast											.46					.07		.40														0.93
Lake Spaulding	Sacramento								.85	.20		.10	1.00	T.	1.80	2.10	.90	.95	1.60				.38										9.88
La Porte	Coast	.12			T.				1.00	.16	T.	.13	.95	.49	1.55	1.53	.90	.80	1.30	.16			.30										9.39
Lathrop	San Joaquin	.02								.12				T.	.04	.90	.28	.38	.10	.39				T.									2.23
Laurel	Coast									.70				.55	2.15	2.85	.80	2.75	1.80	.60				.10									12.30
Laytonville	do																																
Le Grand	San Joaquin								.19						.21	.67	.33																1.40
Lemon Cove	do									.23					.10	.72	.65																1.70
Lick Observatory	Coast							.01	.21	.36			.08	.07	.63	1.77	1.21	.20	.51	.01			.36										5.42
Livermore	do																																
Lone Pine	Owens								.10								27																0.37
Long Valley	Mt'n Lakes				T.				.07	T.	T.		T.		.04	.53	.45	T.	.20				T.										1.29
Lordsburg	Coast																																
Los Alamos	do									.62	.30				.03	1.44	.37	.10	.02														2.85
Los Angeles	do								.02	.70						.92	.36	.01															2.01
Los Banos	San Joaquin														.23	.80	.25	.13	.15				.08										1.64
Los Gatos	Coast								.32	.20			.02	.18	1.30	1.68	1.55	.30	1.33				T.										6.88
Los Molinos	Sacramento																																
Lowe Observatory	Coast				.20						.36						*	*	2.60														3.16
McCloud	Sacramento								1.08	.02		.16	.67	2.00	1.56	1.00	1.11	.92	2.18			T.	10										10.80
McDoel	Klamath							.30	.32			.05	.05	.05	.55	.35	.05	.03	.35				.78										2.88
Madeline	Mt'n Lakes				T.	T.		.05	.10	.06	.05	.10	.06	.05	.23	.20	.30	T.	.50		T.	T.											1.70
Magalia	Sacramento							.80	.30			.40	4.31	3.21	1.45	1.00	.40	4.00					T.										15.87
Mammoth Tank	Desert																																0.00
Maricopa	San Joaquin								.01	.15						.26	.02	.01		.03			.02										0.50
Mariposa	do																																
Marysville	Sacramento								.30				.52	.42	.81	.30	.35	.35															3.05
Mecca	Desert									T.	T.					T.	T.																T.
Melones	San Joaquin	.20								.28				.03	.40	.80	1.50	.98	1.28	.59				.12									6.18
Menlo Park	Coast								.50	.30				.40	.61	.55	.23	.55	.03				.02										3.19
Merced	San Joaquin																																
Merced Falls	do								.14					T.	.26	1.11	.42	T.	.05				.05										2.03
Mesa Grande	Coast									.47	1.41					.50	1.42	.27															4.07
Middlewater	San Joaquin															.02	.61							.01									0.63
Mill Creek (1)	do								.92	.24			.06		1.44	3.07	1.70	.88	1.41	.26			.16										10.14
Mill Creek (2)	Coast									.51	.13					.52	.30	.04															1.50
Mills College	do								.66	.03			.06	.10	.80	1.03	.50	.21	.81				.01										4.21
Milo	San Joaquin										.50	.52				1.73		.90															3.65
Milton (near)	do								.25	.08					.64	2.02	.60	.04	.73				.13										4.49
Modesto	do							T.							1.00	.49							.27										1.76
Mojave	Desert										10					.25																	0.35
Mokelumne Hill	San Joaquin								.62					.70	.14	2.42	1.06	.19	.82				.21										6.16
Mono Ranch	Coast								.45							5.40	1.82	.49															8.16
Monterey	do								.74	.13					.20	.70	1.03	.25	.38														3.43
Monterio	San Joaquin									.10	.08					1.00	.50			.04														1.72
Montgomery Creek	Sacramento																																‡3.60
Mount Tamalpais	Coast								.52	.62		.17	.76	.43	.33	.64	.25	.38	.38				.09										4.57
Mount St. Helena	do																																
Napa City	do								.58	.05		.80	.11	.94	.79	.40	.34	.38	.15														4.54
Napa (S. H.)	do							.10	.33			.51	.21	.97	.57	.73	.29	.75	.02			.05											4.53

TABLE 2.—*Daily precipitation for January, 1913. District No. 11*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Contd.																																	
Needles	Desert										.23																						0.23
Nellie	Coast									*	2.40					2.05																	4.45
Nevada City	Sacramento								.55	.07		.09	.58	.27	1.88	1.80	.88	.66	1.58	.17			.21											8.76
Nevis	do								.60	.15		.22	.24	.27	1.25	1.60	1.15	.55	1.30	.78														8.11
Newhall	Coast					.22	.31									.41	3.23	.45																4.62
Newman	San Joaquin								T.						.30	.94	.41	.12	.07				.03											1.87
North Bloomfield	Sacramento								.90				.40	.70	1.20		1.20	.20	1.50				.20											6.30
North Fork	San Joaquin																																
North Lakeport	Coast								.55		.20	.50	1.25	.77	1.05	.22	.98	1.00	.24				.30											7.06
Oakdale	San Joaquin								T.	.04					.30	.64	.58	.40	.04	.45		.06	.07											2.58
Oak Grove	Coast										.98					.35	1.08																2.41
Oakland	do								.74	.04			.10	.08	.59	.79	.46	.22	.50				.01											3.53
Oakville	do										.92		.42	.83	1.65	1.10	.53	.66	1.40															7.51
Oceanside	do									.16	.53	.09				.56	.10	T.																1.44
Ojai Valley	do								.22	.06						2.60	1.48																	4.36
Orland	Sacramento							.09	.07			.25	1.08	.42	.66	.24	.30	.27	T.			.09	.03											3.50
Orleans	Klamath							1.45	.06	.20	.22	.80	1.95	1.55	.66	.88	.75	1.92				.65	.01											11.10
Oroville	Sacramento						.60		1.07			.30		.49	.73	.72	.43	.30	.70	.07			.10											5.51
Ozeana	Coast																																
Palermo	Sacramento						T.		.60	.50	.50	1.00	1.00																					3.60
Palm Springs	Desert									T.	.05						.65																	0.70
Parkfield	Coast									.33	.07				1.11	1.44	.28	.07	.31															3.61
Pasadena	do									.17	.35					1.41	.79	.41																3.13
Paso Robles	do									.80	.17					1.00	1.67	.50	.12	.03					.08									4.37
Peachland	do								1.60	.01	.01	.12	3.75	.95	1.10	.61	1.30	.78	1.01				.25											11.49
Petaluma	do																																
Phoenix Dam	San Joaquin								.30	.70					.48	1.88	1.35	.26	1.06				.12											6.15
Pilot Creek	Sacramento								.89	.18	T.		.70		1.28	3.15	1.98	1.05	1.78	.30			.38											11.69
Pinchot	Coast								.10	T.	.40				.07	2.14	.85																	3.56
Pine Crest	do															2.01	.85	.54															3.40
Placerville	Sacramento									.40					.85	1.75	1.16	.94	.73	.66			.18											6.67
Point Lobos	Coast								.80	.20	T.	.02	.02	.10	.34	.94	.44	.26	.36	T.			.08											3.56
Point Loma	do				T.					.20	.46	.05	T.				.28	.14	.03	T.	.01			T.	T.			T.	T.	.02	T.	T.	1.19
Point Reyes	do								.27	.22		.06	.63	.57	.40	.07	.04	.24	.10				.19											2.79
Pomona	do									*	*	1.28					1.10	.40																2.78
Porterville	San Joaquin								.19	.09						.06	.58	.16	.04															1.12
Priest Valley	Coast									.39	.12				1.18	1.44	.83	.10	.15					.07										4.28
Quincy	Sacramento								.80	T.		.10	.01	.02	.73	1.50	.10	.60	1.63	.07			.10											5.66
Red Bluff	do								.25	.04		.50	1.54	.50	.10	.58	.24	.27	.90				.08											5.00
Redding	do								.47				.77	1.91	1.34	.33	.16	.86	1.03				.15											7.02
Redlands	Coast									.10	.22					.06	.63	.09																1.10
Reedley	San Joaquin								.23	.22					.22	.50	.18	.02																1.37
Represa	Sacramento								.32					.62	.84	.83	.58	.52	.25			.06												4.02
Rialto (near)	Coast									.20	.10					2.34	1.70	.54																4.88
Rio Vista	Sacramento									.27	T.			.01	.43	.90	.52	.35	.35	.01			.03	.13										3.00
Riverside	Coast									.02	.37					.27	.15	.10																0.91
Rocklin	Sacramento								.30						1.00	.90	.30	.70	.60				.20											4.90
Rohnerville	Coast				.07				.95	.12	.52	.05	.31	2.60	.39	1.08	.71	.34	1.15			T.	.36											8.65
Ruth	do							.02	1.72	.06	.14	.44	1.05	3.09	.84	1.53	1.55	1.42	2.87				.38											15.12
Sacramento	Sacramento								.03	.04			.02	.05	.39	1.02	.51	.08	.32				.06											2.52
St. Helena	Coast							.87	.08	T.		.83	1.20	1.43	1.56	.85	.33	1.90	.03			.20												9.28
Salinas	do									.74	.06	.21				.23	.32	.21	.07	.26				.14										2.44
San Bernardino	do									.18	.42					.58	.20	.31																1.69
San Diego	do									.65	.15					.26	.01	.12																1.19
San Francisco	do								1.04	.18		T.	.11	.05	.35	.93	.45	.25	.41				.07											3.84
San Jacinto	do									.25	.30						.43	.09																1.07
San Jose	do								.20	.14				T.	.37	.93	.35	.02	.27				.01											2.29
San Luis Obispo	do								.13	.47	.04				.78	1.54	.30		.22					T.										3.48
San Mateo	do								.86	.09		.04	.09	.24	1.47	.61	.79	.59																4.78
San Miguel	do									.26						.53	1.11	.10	.03					.06										2.09
San Miguel Island	Ocean									.68	.17					.80																		1.65
Sanger	San Joaquin																																
Santa Ana River	Coast									.75	.24					1.25	.45	.05																2.74
Santa Barbara	do									.34	.24					1.50	.75	.29															.02	3.14
Santa Clara	do								.17	.30				.02	.51	.78	.47	.06	.28				.04											2.63
Santa Cruz	do								1.35	.45		.11	.06	.75	.95	.30	.75	.65	.15				.05											5.57
Santa Margarita	do									.40	.20					1.40	2.65	.83	.06	.05														5.59
Santa Monica	do								.45	.29					*	*	1.19	.14																2.07
Santa Rosa	do	.15							1.08	.17				1.33	1.15	.80	.35	.41	.56	.03			.08											6.11
Sausalito	do								.10	1.05	.10	.08	.15		.87	.45	.50	.63	.66				.20	.08										4.97
Selma	San Joaquin								.15	.06					.33	.63	.13						.04											1.34
Seven Oaks	Coast									.58	.51					.50	.51																	2.10
Sirrively	do								1.82	.09	.15	.40	1.17	2.90	.81	1.71	1.06	1.06	1.96				.40											13.53
Sierra Madre	do								.17	.34						2.91	.57																	3.99
Sierraville	M't'n Lakes								.40						1.70	.90	.60	.20	.40															4.20
Sisquoc Ranch	Coast									.24	.40				.26	.83	.16																	1.89
Sisson	Sacramento		.20					.50	.10			.70	.70	1.60	1.40	.60	.40	1.35																7.55
Soledad	Coast									.50	.10				1.05	.55	.20	.10																2.50
Sonora	San Joaquin								.07	.40					.53	1.63	1.47	.21	.79	.12			.16											5.38
Southeast Farallon	Ocean			.02					.48	.13		.04	.25	.66	.31	.02	.31	.09	.11				.09											2.51
Spreckels	Coast	.04								.97	.10				.20	.33	.48	.18	.09	.33				.12										2.84
Springville	San Joaquin																																	‡1.90
Squirrel Inn	Coast									.20	.97					1.09	1.60	.75																4.61
Stanwood	Sacramento								1.20						2.56	1.93	2.78	3.17					.55											12.19
Stirling City	do								1.00	.05	.09	.85	2.05	3.01	1.75	.60	.65	1.00	4.05	2.10				2.00										19.20
Stockton (S. H.)	San Joaquin								.08	.04		T.			.25	1.23	.44	.08	.18				.07	.03										2.40
Storey	do															.08	.37	.25	.05															0.75
Suisun	Sacramento									.40			.20	.12	.87	.54	.40	.42	.42				.10											3.47
Sulphur Banks	do								.10	.49	.32	.10	.71	.41	.26	1.12	1.05	.20					.13											4.89
Summit	do								.70	.70		.10	.60	.10	2.00	2.80	2.30	2.50	1.60				.20											13.60
Susanville	M't'n Lakes																																	
Tamarack	Sacramento				.12	.20			1.65	.31	.16			1.15	1.65	1.86	1.85	1.93	1.58	1.35			.75											14.56
Tehachapi	San Joaquin																																	
Tehama	Sacramento								.35					2.30	.45	.85	.45		.42	.70			.14											5.66
Tejon Ranch	San Joaquin								.15	.50							.75	.30			.30													2.00
Three Rivers	do									.33	.28					T.	1.30	.90	.36	T.	.02													3.19
Towle	Sacramento	.85							.20	1.00	.20		1.30	.65	.80	1.40	1.40	1.20	3.30	1.85			.60											14.75
Tracy	San Joaquin								T.						.20	.90	.28																	1.38
Tulare	do			T.					.06		.02				T.	.68	.31		.02															1.09
Tustin (near)	Coast									.16	.26					.45	.12	.28																1.27
Ukiah	do							.76		.05	.07	.10	1.33	1.30	1.18	1.12	1.00	.52	1.28				.30											9.01
Upper Lake	Sacramento								1.24	.01	.10	.12	1.24	.64	.90	.85	.91	.37	.68				.19											7.25

TABLE 2.—*Daily precipitation for January, 1913. District No. 11*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
California—Contd.																																	
Upper Mattole	Coast	.07							1.80		.14	.17	1.67	2.80	2.10	1.70	1.15	.55	3.38				.38										15.91
Vacaville	Sacramento								.40			.11	.10	.78	.75	.58	.48	.75	.08				.07	.11									4.13
Valley Springs	San Joaquin									.34	.05				.44	1.62	.36	.71	.22	.37			.05	.12									4.28
Visalia	do									10	9.15				T.	.56	.25															1.06
Warner Springs	Coast									.58	.37					1.18	.24															2.37
Wasco	San Joaquin									.25	.25																					0.50
Watsonville	Coast								.35	.25				.57	1.55	.70	1.21	.24	.45				.16										5.48
Weaverville	do							.02	1.15	T.	.02	.62	.92	2.05	.50	.48	.82	.78	2.98			.02	.38	T.								8.74
Weitchpec	Klamath			.05				.27	2.39	.07	.12	.63	.91	3.22	.81	1.48	1.40	1.58	4.66			.05	.63		.02	.05	.01				.01		16.36
West Branch	Sacramento								.93	.08		.17	1.38	2.15	2.24	1.38	1.44	1.06	.73	.46			.17										16.19
Westley	San Joaquin														.93	.23	.42	.02						.08								1.68
Westpoint	do									.62	.80	.50		T.	.93	1.86	.86	.89	.59	.61			.10										7.78
West Saticoy	Coast								.31	.22					.88	2.90	.28																4.59
Wheatland	Sacramento								.40	.06		.02	.12	.06	.73	1.28	.69	.13	.37				.09										3.95
Willows	do									.15		T.		1.08	.37	.70	.41	.17	.37				.12										3.37
Yorba Linda	Coast									.18						.48																	0.66
Yosemite	San Joaquin								.22	.58	0.05				.20	2.30	2.53	.13	.51	.17													6.69

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

81759—13——9

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 11, California.*

Date.	Lakeview, Oreg.		California.																							
			Alturas.		Barstow.		Brans-comb.		Brawley.		Colusa.		Eureka.		Fresno.		Independ-ence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porter-ville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	34	6	41	19	71	36	52	29	73	32	58	32	51	37	49	38	65	35	67	47	49	38	58	26	62	29	57	36
2	45	19	51	36	68	31	68	30	73	32	58	40	53	36	61	35	60	29	81	45	57	46	68	26	63	32	62	36
3	41	17	44	15	71	30	57	30	73	33	58	30	48	38	60	33	59	24	83	55	60	41	71	28	61	32	63	35
4	33	11	37	15	61	38	50	21	72	37	56	36	43	37	47	31	52	20	60	43	43	27	48	23	41	32	48	35
5	11	− 1	18	− 1	50	24	44	19	47	37	44	28	41	33	39	24	23	9	49	36	30	22	35	14	41	22	37	28
6	16	− 8	24	− 8	48	21	47	19	42	24	43	23	41	28	39	17	25	5	47	30	34	23	44	4	46	20	42	28
7	26	2	34	8	46	12	48	20	47	22	42	28	50	35	44	20	32	4	50	28	40	31	41	15	48	18	38	30
8	26	15	33	17	48	16	54	30	54	21	42	30	47	38	46	27	32	8	57	36	38	30	32	25	56	21	35	28
9	18	12	28	4	50	30	40	24	52	21	42	34	46	34	47	32	34	11	52	40	31	25	35	23	57	32	36	28
10	21	7	28	12	56	22	44	24	54	24	45	35	44	32	44	32	36	19	54	39	38	26	50	6	42	32	43	25
11	27	2	28	− 6	53	20	45	26	57	24	38	30	46	36	46	31	34	4	55	39	38	32	32	13	45	28	35	28
12	31	17	34	22	51	21	45	34	59	25	44	32	54	46	55	36	38	10	59	40	42	38	40	28	52	28	38	35
13	37	29	46	27	52	23	45	35	61	27	50	40	49	41	59	40	38	12	68	44	43	41	42	35	60	30	51	35
14	36	21	42	5	58	25	43	32	62	28	51	41	52	40	52	45	48	16	55	44	42	33	39	31	57	37	48	44
15	36	23	35	5	64	26	39	32	66	30	49	40	49	40	51	41	40	31	52	46	41	33	34	29	59	42	47	41
16	27	17	30	17	62	28	36	31	67	35	53	37	46	37	50	40	33	30	55	45	39	33	38	29	51	43	49	38
17	29	12	38	6	68	37	44	28	66	40	54	40	53	39	55	42	46	32	59	47	43	36	39	30	58	40	48	38
18	33	16	40	24	63	36	44	36	66	33	56	42	53	37	53	45	51	20	59	44	44	31	41	34	55	38	52	39
19	23	9	32	− 3	67	38	46	23	67	33	55	32	45	32	50	36	46	24	58	48	41	31	49	35	54	43	48	34
20	27	1	30	− 7	62	35	48	23	62	39	54	34	46	31	56	31	39	18	64	44	44	34	49	19	55	33	50	34
21	27	6	35	2	58	23	52	25	61	29	50	28	48	34	55	32	40	14	63	41	45	33	45	20	56	31	41	32
22	27	16	33	25	61	23	55	25	62	26	46	30	48	36	52	34	43	14	56	42	42	34	39	30	58	32	48	38
23	25	− 1	27	−21	62	26	55	28	68	31	50	31	48	33	55	40	44	23	60	42	47	34	55	22	56	33	54	35
24	37	15	48	12	66	28	65	30	73	41	54	34	54	42	56	34	60	25	68	42	52	43	64	25	59	32	60	35
25	40	24	40	15	71	33	65	30	77	34	58	33	50	41	59	38	60	30	72	52	57	47	67	27	60	33	64	37
26	43	17	35	− 2	73	34	67	33	80	35	60	33	44	40	62	37	60	33	73	42	54	49	69	26	72	30	62	38
27	47	15	37	− 5	69	34	68	34	75	35	62	34	46	36	65	38	57	26	65	41	56	47	71	28	70	41	66	40
28	45	16	40	− 1	68	36	70	34	78	48	62	34	48	38	64	40	55	25	77	50	55	49	73	28	66	42	65	38
29	44	8	37	− 7	75	37	71	35	77	37	62	34	48	37	66	40	63	33	65	45	61	50	70	28	72	43	68	40
30	40	6	38	− 4	74	38	72	39	81	38	67	34	54	40	65	41	62	32	61	44	57	51	73	27	70	41	68	48
31	38	13	39	− 7	72	34	77	39	77	39	71	49	57	39	67	41	62	35	61	40	60	48	77	30	77	44	72	51
Mns..	31.6	11.7	35.6	7.5	61.9	28.9	53.4	29.0	65.5	31.9	52.7	34.3	48.5	36.9	53.8	35.2	46.4	21.3	61.4	42.7	45.9	36.6	51.2	24.6	57.4	33.7	51.5	35.7

Date.	California.																									
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.		Summit.		Susanville.		Yosemite.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	74	35	57	36	61	48	58	46	59	33	63	45	75	45	58	32	40	27	56	35	36	18	.....	.....	44	19
2	76	42	59	37	73	48	58	45	62	32	77	47	78	45	62	31	41	25	58	33	46	22	.....	.....	40	19
3	82	42	63	34	78	51	61	44	63	30	77	43	76	46	63	29	40	24	58	29	38	24	.....	.....	40	19
4	56	39	49	33	58	46	50	40	49	36	61	42	60	54	60	31	47	12	54	37	26	11	.....	.....	30	17
5	42	31	40	27	47	36	41	35	42	31	42	33	52	28	44	32	21	− 9	38	24	10	− 4	.....	.....	30	12
6	36	22	43	26	45	28	46	33	44	26	44	20	44	27	44	30	26	8	44	21	34	7	.....	.....	32	1
7	50	18	46	28	49	25	48	36	52	25	52	21	58	30	51	26	30	19	46	25	26	5	.....	.....	38	4
8	60	24	39	32	56	34	49	36	48	35	53	25	56	32	50	32	28	18	40	27	36	13	.....	.....	32	15
9	50	34	37	31	52	41	40	35	42	35	47	35	50	35	41	33	22	7	38	32	24	6	.....	.....	34	20
10	49	36	45	27	50	39	49	36	47	31	47	33	55	38	50	29	28	9	47	28	24	1	.....	.....	22	5
11	54	28	42	30	54	35	46	39	47	30	55	30	54	34	49	28	28	10	45	27	24	− 1	.....	.....	32	− 2
12	59	27	54	40	56	37	52	43	53	45	56	32	55	34	51	41	28	24	56	30	30	24	.....	.....	36	22
13	69	34	54	45	67	45	54	47	58	49	58	35	61	39	53	50	27	24	57	42	30	18	.....	.....	44	25
14	61	35	49	44	57	44	55	42	55	46	50	46	54	40	55	45	35	24	55	44	24	12	.....	.....	34	28
15	61	39	46	39	56	48	51	42	51	43	51	45	52	48	57	40	34	25	50	42	20	18	.....	.....	33	28
16	52	43	49	40	60	49	52	43	54	42	54	42	55	44	52	34	39	22	48	40	22	18	.....	.....	32	28
17	54	43	50	41	58	48	54	43	53	44	57	35	55	41	54	39	38	26	54	40	27	18	.....	.....	40	23
18	57	33	52	39	57	44	54	44	57	42	54	45	55	43	55	47	36	20	52	44	27	18	.....	.....	33	28
19	58	40	48	33	59	46	50	39	53	32	57	44	62	43	52	28	35	14	50	32	38	20	.....	.....	31	14
20	61	33	52	34	65	43	53	42	55	33	62	41	58	39	54	28	36	21	44	30	27	10	.....	.....	36	4
21	62	27	51	35	61	41	51	40	51	29	56	32	56	37	51	27	35	24	50	29	33	18	.....	.....	33	5
22	53	30	47	40	55	42	51	43	52	38	56	37	54	38	48	37	35	13	49	34	34	18	.....	.....	38	5
23	62	31	52	35	56	42	54	41	56	33	57	47	51	40	56	28	34	19	51	33	28	15	.....	.....	34	14
24	70	30	55	38	65	41	58	41	58	32	66	40	63	38	58	32	40	26	54	34	40	20	.....	.....	44	11
25	78	40	58	39	67	46	61	43	63	34	72	46	72	42	60	31	40	21	57	34	40	26	.....	.....	45	15
26	78	42	57	40	61	46	59	41	62	32	76	46	65	43	64	32	42	19	58	35	38	22	.....	.....	48	15
27	77	41	58	39	57	40	63	46	66	34	63	41	57	44	62	31	38	17	59	35	38	24	.....	.....	48	19
28	75	49	61	40	68	50	60	43	58	36	60	45	62	46	63	31	39	18	59	33	44	25	.....	.....	48	17
29	72	41	63	43	58	47	55	42	56	42	60	46	60	44	60	36	40	19	62	40	40	22	.....	.....	49	17
30	78	39	63	40	58	46	62	43	63	38	71	39	58	44	63	34	45	28	57	35	38	22	.....	.....	49	17
31	77	43	68	44	64	43	68	48	70	36	68	37	60	42	69	35	46	27	58	36	40	22	.....	.....	50	16
Mean	62.7	35.2	51.8	36.4	58.6	42.5	53.6	41.3	54.8	35.6	58.8	38.5	58.8	40.1	55.1	33.5	35.3	19.0	51.7	33.5	31.7	15.9	.....	.....	38.0	15.6

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning: the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor.

GENERAL SUMMARY.

The opening and closing days of the month were mild, but the period between was cold, with more than the usual amount of precipitation. In nearly all sections more snow fell than for a number of years, and, as there was but little thawing weather, the snow in the mountains is not well packed, but it is well drifted. The railways in Washington and western Montana suffered serious delays and congestion of freight and passenger traffic due to slides and to the snow blowing into cuts. On some of the branch railroads the heavy slides of snow, dirt, and rocks prevented trains from being operated for over a week. All rivers and streams maintained stages above normal, but there were no floods, and a good proportion of the snow that melted was absorbed by the soil. During all the cold weather, fall wheat was protected by a snow blanket, and, so far as learned, the wheat has not been injured. Winter feeding of stock was heavier than usual and some suffering has occurred on account of snow covering the winter feeding grounds.

TEMPERATURE.

The average temperature of the month, as determined from the records of 262 well-distributed stations, was 26.8°, or 2.9° below the normal. While negative departures were general in all parts of the district, they were more pronounced in north central and eastern Washington, northern Idaho, northwestern Montana, and southern Oregon. Mean temperatures ranged from 40°, or slightly above, on the Oregon coast, to 10°, or a little below, in northwestern Wyoming and southeastern Idaho. The highest monthly mean (43.1°) was recorded at Toledo, Oreg., and the lowest (9°) at Moran, Wyo. The greatest daily range (71°) occurred at Pierson, Idaho. The warmest period was on the 2d, at which time maximum temperatures of 60° or above were recorded at Moxee, North Yakima, and Walla Walla, in Washington, and Hermiston, in Oregon. Minimum temperatures of zero or below were quite generally reported from the 4th to the 8th and from the 19th to the 29th in all sections, except western Washington and western Oregon. The lowest temperature (−47°) was recorded at Moran, Wyo., on the 6th. Taken as a whole, the month was unusually cold, and in Oregon, with the exception of 1907, it was the coldest January experienced in the past 23 years.

PRECIPITATION.

The average precipitation, as determined from the records of 353 stations, was 4.79 inches, which is 0.65 of an inch in excess of the January normal for the district. Positive departures approximating nearly 5 inches were reported from southwestern Washington, while elsewhere, with the exception of scattered areas along the Columbia and Willamette Rivers and in portions of southwestern Montana, southern Idaho, and southwestern Oregon, where it was normal or slightly below, the average precipitation was above normal. The greatest monthly amount (25.67 inches) was reported from Happy Home, Oreg., and the least monthly amount (0.14 of an inch) from Gurdane, Oreg. The greatest 24-hour precipitation was recorded at Happy Home, Oreg., on the 17th. The dry periods were from the 4th to the 6th and during the last six days, when there was but little precipitation in any section. The wet periods were from the 11th to the 15th and 20th to the 24th in practically all sections. More than the usual amount of snow fell in nearly all portions of the district, and in Washington the majority of correspondents agree that the snowfall for January was the heaviest for a period of 14 years, and in several localities of that State it is believed to have been the heaviest in the past 20 years. The greatest monthly amount of snow, 190 inches, measured in an official gage, was recorded at Musick, Oreg., but an unofficial measurement of 230 inches was reported from Wellington, Wash.

THE RIVERS.

The Willamette River and tributary streams were higher during January than during December, and they were above normal as well, but there were no freshets. In most cases the highest stages occurred on the 1st, but there were a rise toward the end of the second decade during which the stages nearly equaled and in some cases exceeded those earlier in the month. The highest water at Portland was 10.9 feet or 4.1 feet less than the flood stage. The lowest stages occurred on the 31st.

The Columbia and Snake Rivers averaged below normal and were lower than in December. The difference between the high and low stages was slight, but, generally speaking, there was a fall throughout the month. The lowest stage at The Dalles was 0.5 foot on the 10th, 11th, and 16th. At Lewiston the lowest stage was 0.9 foot on the 7th and 8th. The Columbia River, at Kennewick, was frozen from the 19th to 24th, inclusive, and floating ice brought navigation to a temporary close on the 8th of the month at this point. Heavy ice began to run at The Dalles on the 13th and continued for a week, and it was again observed on the 29th and 31st.

MISCELLANEOUS PHENOMENA.

Killing frosts were quite general in western Oregon during nearly the entire month. "Chinook" conditions were reported in central Washington and northeastern Oregon from the 24th to the 31st. The prevailing winds were from the southwest, and at times caused considerable damage in the eastern and central sections by drifting the heavy snows and interfering with construction work and the movement of railroad trains. In southern Oregon the observer at Paisley reported that the wind on the 17th attained the highest velocity ever known in that locality. The steamer *Rosecrans* was wrecked on "Peacock Spit," near the mouth of the Columbia River, on the morning of the 7th, and the ship with all, except three, of her crew of 35 men, was lost during the thick weather and moderately high winds that prevailed at the time. The disaster is believed to have been caused by failure on the part of the crew to properly distinguish between the coast lights. On the summits and western slopes of the Cascade Mountains in Washington snow slides caused numerous railroad blockades and some loss of life to laborers engaged in the work of clearing the tracks.

TABLE 1.—*Climatological data for January, 1913. District No. 12, Columbia Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Montana.																				
Anaconda	Deer Lodge	5,300	11	22.4	− 1.1	51	28	− 18	5	34	2.18	+ 1.27	0.85	17.2	13	10[a]	15[a]	5[a]		C. D. Demond.
Butte	Silver Bow	5,760	18	25.7[k]		47[k]	28			26[k]	0.32	− 0.54	0.08	3.2	7	7	5	19	nw.	J. R. Wharton.
Columbia Falls	Flathead	3,100	17	18.6	− 3.5	46	29	− 9	20	34	3.09	+ 0.92		38.2	18	10	5	16	sw.	J. M. Grist.
Como	Ravalli	3,700	4	27.2		46	27†	0	5	29	0.73		0.22	16.5	13	5	10	16		Hiram Platt.
Dayton	Flathead		8	22.5		45	26†	− 8	13	32	3.00		0.75	14.0	10	11[b]	12[b]	6[b]		A. J. Ruechell.
Deer Lodge	Deer Lodge	4,529	1								0.83		0.35	7.5	5	7	14	10		H. B. Grant.
East Anaconda	do	5,500	7	20.8		51	13	− 16	5	44	0.50			9.9		10	15	6		C. D. Demond.
Fortine	Lincoln	2,975	7	17.1		45	25	− 24	13	34	2.03		0.42	28.2	15	14	1	16	nw.	Mike Petery.
Hamilton	Ravalli	3,575	10	25.5	− 1.9	48	2†	− 8	6	29	0.52	− 0.40	0.15	3.5	9	10	2	19	s.	Hamilton Chamber of Com.
Hat Creek	Powell	6,000	3								3.31		2.00	20.8	15	0[b]	1[b]	28[b]	w.	M. K. Landreth.
Haugan	Missoula	3,150	1	17.4		43	31	− 32	6	47	6.44		1.10	110.7	21	12	5	14	sw.	U. S. Forest Service.
Heron	Sanders	2,261	1	24.0		61	30	− 10	6	59	2.36		0.36	70.0	17	11	0	20	nw.	E. Knott.
Kalispell	Flathead	2,965	14	18.2	− 1.0	45	29	− 12	6	31	2.68	+ 1.09	0.80	22.7	16	7	5	19	nw.	U. S. Weather Bureau.
Libby	Lincoln	2,055	3	18.2	− 6.3	49	25	− 19	6	43	3.06	+ 0.29	0.38	30.1	23	9	5	17		U. S. Forest Service.
Missoula	Missoula	3,225	33	20.8	− 0.5	43	2†	− 14	6	35	3.06	+ 1.67	0.71		16					U. S. Weather Bureau.
Ophir	Powell	6,800	4								4.63		1.25	75.0	12	6	18	7	w.	E. S. Wilton.
Ovando	do	4,207	13	13.8	− 1.8	39	25	− 32	6	34	3.68	+ 1.79	0.72	82.0	22	0	30	1	w.	S. B. Muchmore.
Philipsburg	Granite	5,275	9								0.45	− 0.29	0.20	4.5	4					G. T. Bramble.
Plains	Sanders	2,475	14	21.0[e]	− 4.1	44	26	− 10[k]	6	38[k]	3.05	+ 2.13	0.80	30.5	13	9[a]	6[a]	15[a]	sw.	James M. Self.
Pleasant Valley	Flathead	3,500	5	15.9		44	28	− 39	6	63	2.79		0.34	46.1	20					A. D. Stillman.
Polson	do	2,920	5	24.5		45	31	− 3	13	27	1.43		0.56	20.0	7					F. P. Brown.
St. Ignatius	Missoula	2,700	7	23.2		47	2	− 14	13	33	0.76		0.20	12.5	5	6	8	17	se.	U. S. Reclamation Service.
Saltese	do	3,600	8																	E. K. Tarbox.
Stevensville	Ravalli		1	23.5		48	2	− 12	6	35	1.66		0.82	16.7	13	12	11	8	s.	University Orchard Co.
Thompson Falls	Sanders	2,462	1	22.0		43	25†	− 16	20	45	4.21		1.36	49.0	16	6	17	8	w.	U. S. Forest Service.
Trout Creek	do	2,375	1																	James Hylent.
Willow Glen St'k Farm	Deer Lodge	5,064	2	18.2		48	29	− 20	4†	50						17[a]	1[a]	12[a]	sw.	G. E. Luce.
Wyoming.																				
Afton	Lincoln	6,200	9	15.4		48	1	− 29	7	44	0.62		0.11	7.5	8	7	1	23	s.	A. V. Call.
Alta	do	7,000	3	13.0		38	28	− 39	6	44	2.00		0.37	25.9	11	7	2	22	sw.	Mrs. Lucy Brown.
Bechler River	Yellowstone Park.		1																	
Bedford	Lincoln	5,900	13	13.3	− 4.8	38	14†	− 32	6	42	1.31	− 0.81	0.26	22.8	10	6	3	22	w.	C. G. Heiner.
Moran	do		1	9.0		34	25	− 47	6	44	3.13		0.51	40.1	19	4	7	20		U. S. Reclamation Service.
Snake River	Yellowstone Park.	7,000	7																	
Nevada.																				
San Jacinto	Elko		8	18.2		46	25	− 38	6	61	0.25		0.20	2.5	2	17	1	13	nw.	F. W. Marchant.
Utah.																				
Standrod	Boxelder		7	23.3		45	3	− 16	6	30	0.31		0.07	7.9	8	12	12	7	sw.	T. B. Jones.
Idaho.																				
Albion	Cassia	4,650	10	23.0	− 5.9	46	14†	− 24	6	38				11.5	6	5	21	5	w.	C. E. Bocock.
Almo	do		3								0.27		0.12	1.4	4	12	5	14	w.	Wm. D. Cahoon.
American Falls	Oneida	4,341	21	21.0	− 3.6	46	25	− 20	6	36						21	7	3	ne.	Geo. Stoll.
Arrowrock	Boise	3,100	1	24.1		47	14	− 8	6	28	2.75		0.63	31.7	10	16	4	11	w.	U. S. Reclamation Service.
Blackfoot	Bingham	4,503	17	19.6	− 3.2	43	25	− 20	6	31	0.89	− 0.13	0.55	11.0	6	5	12	14	sw.	E. A. Dowd.
Blackfoot Dam	Bannock	6,200	3	15.2		45	15	− 30	6	46	1.84		0.40	20.0	11	5	2	24	s.	S. C. Waddell.
Bogus Creek	Boise	4,200	4								2.68		0.45	42.0	11	9	12	10		F. P. Ingraham.
Boise	Ada	2,739	27	28.0	− 1.3	50	13	− 2	6	24	1.34	− 0.55	0.46	12.8	13	6	4	21	nw.	U. S. Weather Bureau.
Bonners Ferry	Bonner	1,850	6	22.1		48	27	− 6	6†	49	3.17			35.0	10	7	4	20	sw.	W. H. Heideman.
Boulder Mine	Boise	4,800	3								5.91		1.60	70.8	16	14	2	15		Patrick Moriarty.
Buhl	Twin Falls	3,800	6	25.4		46	25	− 6	6	23	0.75		0.30	7.5	6	6	11	14	w.	S. C. Orr.
Caldwell	Canyon	2,372	8	26.6		52	3†	− 1	6	32	0.92		0.20	13.5	11	4	14	13	e.	Wm. J. Boone, D. D.
Caldwell Exp. Station	do		1	24.2		52	3	− 7	6	38	1.45		0.56		10					C. B. Hampson.
Cambridge	Washington	2,651	17	17.3	− 5.3	43	15	− 21	6	38	4.53	+ 0.93	0.90	48.0	10					C. H. Shepherd.
Cedar Creek Dam	Twin Falls	5,220	2								0.93		0.29	15.0	6	11	12	8	w.	Robert Hoffman.
Chesterfield	Bannock	5,424	16	17.7	− 1.8	47	1	− 29	6	49	1.37	− 0.08	0.40	15.1	8	6	8	17	w.	C. S. West.
Clarks Fork	Bonner	2,084	1	23.6		48	29	− 1	6	33	5.11		0.80	56.0	18	4	14	13		Wm. Potter.
Clyde	Custer	6,000																		R. L. Sutcliffe.
Council	Adams	3,059	1	20.6		44	13†	− 11	6	28	6.24		1.75	53.0	12	9	2	20		F. L. Featherston.
Culdesac	Nez Perce	1,520	4	25.8		53	3	− 12	6	32	3.25		0.71	39.4	12	12	7	12		Mrs. B. B. Caldwell.
Deary	Latah	2,854	1	23.4		42	26†	− 6	6	25				83.0	17	5	6	20	sw.	W. J. Davis.
Dent	Clearwater	1,350	7																	Emil Schuessler.
Driggs	Fremont	6,097	6	13.4		36	25	− 39	6	50	2.51		0.60	27.0	10	7	4	20	sw.	W. H. Durrant.
Emmett	Canyon	2,350	6	27.0		50	14	1	6	30	1.36		0.40	9.9	9	5	8	18	s.	U. S. Forest Service.
Forney	Lemhi	6,000	12																	M. B. Merritt.
Garnet	Elmore	2,575	13	30.2	− 3.8	56	25	1	6	32	0.35	− 0.47	0.30	3.5	2	14	6	11	e.	A. A. Kenison.
Glenns Ferry	do	2,569	4	25.6		45	26	− 8	6	30	1.48		0.35	16.0	7	12	7	12		I. E. Perkins.
Gooding	Lincoln	3,572	3	19.6		42	25	− 19	6	37	0.63		0.27	25.3	8	8	5	18	w.	John Krall, jr.
Grand Forks	Shoshone	3,000	3	19.6		40	3	− 23	6	41	10.71		1.86	114.6	22	4	14	13	nw.	John E. Keach.
Grandview	Owyhee		3	28.2		54	3	− 3	6	33	0.70		0.25	3.0	5	10	13	8	se.	H. E. Hanna.
Grimes Pass	Boise	5,200	3								4.45		0.75	64.3	18					Jos. M. Clarke.
Guffey	Owyhee	2,381	4	30.0		53	14†	1	6	36	0.54		0.16	2.5	8	24	7	0	w.	Fred Perry.
Hailey	Blaine	5,347	10	15.0	− 5.6	37	3†	− 21	6	34	3.45	− 0.14	0.80	49.7	10	11	7	13	sw.	U. S. Forest Service.
Hollister	Twin Falls	4,550	1	24.7		47	25	− 21	6	32	0.49		0.15	5.5	6	4	25	2	w.	J. W. Bouton.
Hotspring	Owyhee	2,590	7	28.9		55	18	− 2	6	31	0.36		0.20	4.0	3	6	13	12		J. M. Waterhouse.
Idaho City	Boise	4,000	11																	Mrs. Emma Hammer.
Idaho Falls	Bonneville	4,742	18	21.6		48	26	− 19	6	48	1.24	− 0.42	0.32	12.9	11	8	3	20	n.	Dr. T. M. Bridges.
Indian Cove	Owyhee			27.6		54	3	− 7	6	31						12	6	13	e.	Capt. O. M. Carter.
Indian Valley	Adams	2,999	4								2.74		0.65	29.9	13	14	3	14	s.	A. M. Henke.
Irwin	Bonneville	6,500	11																	Mrs. Eva Buckland.
Kellogg	Shoshone	2,305	8	23.9		49	26	− 10	20	40	6.69		1.20	58.8	19	10	1	20		W. McM. Huff.
Kilgore	Fremont			10.9		40	17	− 34	6	40	3.61		1.50	40.6	11	8	3	20	e.	W. H. McCormick.
Kirkham	Boise	4,200	3								5.31		0.82	61.1	16	10	7	14	e.	Mrs. Josie B. West.
Kooskia	Idaho	1,261	4	24.8[a]		50[a]	25	− 19[a]	6	40[a]	4.52		1.05	55.2	12	6	5	20		U. S. Forest Service.
Lakeview	Bonner	2,250	15	19.4	− 8.7	40	1	1	6	14	3.46	+ 0.30	0.42	65.0	13	2	7	22	sw.	E. D. Faust.
Landore	Adams	5,300	8	20.0[b]		40[a]	25†	− 4[b]	5	31[b]	7.94		1.10	79.5	15					Mrs. Emma L. Brown.
Leadore	Lemhi		1																	Joseph Balluff.
Lewiston	Nez Perce	757	19	28.9	− 5.6	57	3	2	6	34	2.33	+ 0.75	1.00	23.4	15	4	7	20	ne.	U. S. Weather Bureau.
Little Camas	Elmore	5,000	3								3.57		1.25	52.9	16	6	5	20	w.	Solon McCoy.
Loon Creek	Custer	6,000	3	16.0		41	25	−38	6	45	1.96		0.60	27.1	12	6	3	22	sw.	Mrs. Mary Williams.
Mackay	do	5,897	5	12.2		40	25	−20	6	35	1.45		0.55	22.0	6	7	24	0	nw.	U. S. Forest Service.
Meridian	Ada	2,657	2	26.6		48	14†	− 4	6	28	1.24		0.43	11.5	14	6	10	15	nw.	A. W. Garrett.
Mesa	Adams	3,275	2	20.5[b]		43[b]	25	−10[a]	6	39[a]									e.	I. S. Carter.

TABLE 1.—*Climatological data for January, 1913. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Idaho—Continued.																				
Middle Fork	Idaho	1,397	2	26.9	.....	47	3	− 7	6	28	.....	.....	1.10	80.5	17	4	10	17	.....	Jos. McGhee.
Milner	Twin Falls	4,110	9	24.2	.....	44	25	−20	6	33	0.51	.....	0.24	8.0	7	6	11	14	w.	J. K. Young.
Moscow	Latah	2,748	20	23.7	− 5.1	54	26	− 7	5	27	.....	.....	.....	.....	.....	5	4	22	se.	University of Idaho.
Mountain Home	Elmore	3,150	7	24.6	.....	46	25	−10	6	29	0.82	.....	0.16	10.0	10	8	8	15	.....	Mrs. Ellen Manion.
Murtaugh	Twin Falls	.....	6	22.3e	.....	47e	25	−26e	6	38f	0.37	.....	.....	8.6	6	.....	.....	.....	w.	J. E. Steinour.
New Meadows	Adams	3,950	8	.....	.....	.....	.....	−38e	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Lee Highley.
Nezperce	Lewis	3,082	3	24.0	.....	44	14†	−16	6	40	2.63	.....	0.54	30.0	9	6	9	16	.....	P. Mitchell.
Oakley	Cassia	4,700	19	26.2	− 2.9	51	26	−16	6	33	0.25	− 0.70	0.10	5.0	3	6	15	10	s.	John Adams.
O'Hara Bar	Idaho	1,557	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. D. Agnew.
Orofino	Clearwater	1,027	8	25.8	.....	45	31	− 5	6	30	6.10	.....	1.73	67.3	17	7	16	8	.....	Geo. Alteneder.
Payette	Canyon	2,159	21	24.4	− 4.2	51	14	− 7	28	36	1.27	− 0.41	0.26	14.2	11	7	9	15	n.	E. F. Allen.
Pierson	Custer	7,000	4	12.2b	.....	44d	25	−42	6	71d	0.52	.....	0.21	6.0	3	9	1	21	s.	D. P. Clarke.
Pine	Elmore	4,100	3	.....	.....	.....	.....	.....	.....	.....	6.38	.....	1.50	71.6	14	5	7	19	.....	Mrs. Jennie Potter.
Pleasant Valley	Ada	3,000	5	25.8	.....	48	3	3	7†	27	0.41	.....	0.11	8.4	12	8	3	20	se.	C. E. Friedrich.
Pocatello	Bannock	4,483	13	23.3	− 1.8	47	3	−13	6	30	0.81	+ 0.15	0.26	10.0	11	3	8	20	se.	U. S. Weather Bureau.
Pocatello Nursery	do	5,396	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Fannie E. Say.
Poplar	Bonneville	5,500	3	15.0	.....	40	25	−29	5	34	0.69	.....	0.29	8.0	3	8	3	20	sw.	C. M. Lawrence.
Porthill	Bonner	1,665	23	19.4	− 3.7	44	25	− 3	5†	25	2.27	− 0.52	0.30	32.0	16	11	8	12	.....	H. A. French.
Powers Ranch	Boise	4,300	3	.....	.....	.....	.....	.....	.....	.....	4.58	.....	0.98	36.5	10	15	0	16	.....	Mrs. Mary French.
Priest River Experiment Station:																				
No. 1	Bonner	2,500	1	21.3	.....	38	25	− 6	5	25	3.74	.....	0.80	57.6	15	5	8	18	s.	D. R. Brewster.
No. 2	do	2,500	1	22.1	.....	44	25	− 6	5†	27	3.62	.....	0.80	55.8	15	5	8	18	se.	Do.
No. 3	do	.....	1	19.8	.....	44	25	−14	5	33	3.77	.....	0.80	57.8	15	5	8	18	e.	Do.
Pyle Creek	Boise	3,100	3	.....	.....	.....	.....	.....	.....	.....	5.27	.....	1.20	62.1	15	11	5	15	w.	P. V. Smith.
Rattlesnake Creek	Elmore	4,000	3	.....	.....	.....	.....	.....	.....	.....	2.78	.....	0.65	42.5	18	7	9	15	.....	R. M. Green.
Richfield	Lincoln	4,306	3	16.2	.....	38	3†	−26	6	38	1.10	.....	0.35	23.5	7	4	15	12	ne.	Idaho Irrigation Co.
Roseberry	Boise	4,872	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Rev. T. P. Graham.
Roseworth	Twin Falls	4,650	2	.....	.....	.....	.....	.....	.....	.....	0.46	.....	0.26	4.1	7	3	15	13	sw.	D. B. Hartwell.
Rupert	Lincoln	4,204	6	23.0	.....	45	25	−14	6	29	0.45	.....	0.17	7.1	9	6	5	20	sw.	Will Parry.
St. Anthony	Fremont	4,968	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. C. Sharp.
St. Maries	Kootenai	2,263	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. S. Turnbull.
Salmon	Lemhi	4,040	7	18.9	.....	48	25	−14	6	33	0.63	.....	0.12	9.5	13	6	20	5	nw.	Z. T. Vincent, jr.
Sandpoint	Bonner	2,086	2	23.0	.....	43	25	− 4	6	24	4.69	.....	0.90	67.0	19	5	10	16	s.	S. M. Moore.
Sheep Hill	Boise	5,000	3	.....	.....	.....	.....	.....	.....	.....	5.89	.....	1.80	53.5	11	.....	.....	.....	.....	C. M. Gardner.
Shoshone	Lincoln	3,968	5	20.4	.....	40	14†	−17	6	29	1.21	.....	0.42	10.5	8	3	22	6	ne.	Zell Truman.
Silver City	Owyhee	6,280	5	.....	.....	.....	.....	.....	.....	.....	2.27	.....	0.47	20.9	17	6	9	16	se.	Russel Stoddard.
Smith Prairie	Elmore	5,200	3	.....	.....	.....	.....	.....	.....	.....	3.18	.....	1.08	37.3	15	.....	.....	.....	.....	Wm. W. Newell.
Soldier Creek	Blaine	5,755	2	15.6e	.....	42e	26	−21e	6	39e	.....	.....	.....	.....	.....	.....	.....	.....	nw.	J. E. Minear.
Spirit Lake	Kootenai	2,560	2	22.6	.....	47	25	− 6	6	31	5.72	.....	1.20	40.9	16	7	2	22	ne.	M. C. Krause.
Springfield	Bingham	4,420	4	19.6	.....	42	3†	−25	6	34	0.31	.....	0.21	5.4	5	2	10	19	sw.	Mrs. W. A. Edwards.
Spring Hill	Ada	3,607	...	29.6	.....	53	13	− 1	6	34	2.41	.....	0.71	23.8	8	1	13	17	se.	Ray G. Lyons.
Sugar	Fremont	4,892	5	15.2	.....	39	3	−26	6†	36	0.76	.....	0.33	16.0	6	10	0	21	sw.	Utah-Idaho Sugar Co.
Sunnyside	Elmore	3,500	3	27.9	.....	49	18	− 7	6	46	0.72	.....	0.14	21.0	8	.....	.....	.....	nw.	Col. M. W. Wood.
Tripod Mountain	Boise	4,300	3	.....	.....	.....	.....	.....	.....	.....	3.26	.....	0.69	39.6	13	13	3	15	.....	Mrs. Verna Paddock.
Twin Falls	Twin Falls	3,825	7	24.6	.....	49	15	−13	6	33	1.19	.....	0.30	12.3	10	2	22	7	sw.	J. A. Waters.
Vernon	Fremont	5,050	14	15.8	− 3.2	45	15	−29	6	43	0.87	− 0.97	0.30	8.7	6	9	9	13	sw.	A. M. Slatery.
Wallace	Shoshone	2,728	5	22.6	.....	46	12	− 8	6	32	7.31	.....	1.09	.....	20	.....	.....	.....	e.	U. S. Weather Bureau.
Weiser	Washington	2,114	1	23.2	.....	46	14	− 6	28	35	2.51	.....	0.42	23.8	11	11	5	15	se.	J. W. Lapish.
Wendell	Lincoln	3,400	4	23.4	.....	46	15	−14	6	34	1.11	.....	0.32	12.5	7	11	15	5	w.	C. L. Dingler.
Washington.																				
Aberdeen	Chehalis	162	22	35.5	− 3.9	51	31	19	5	20	16.45	+ 4.78	2.52	15.0	23	1	17	13	e.	C. S. Weatherwax.
Anacortes	Skagit	60	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Anatone	Asotin	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Baker	Skagit	390	7	30.6	.....	41	25†	14	5†	14	14.19	.....	2.73	70.5	20	6	2	23	.....	Robt. M. White.
Bellingham	Whatcom	60	18	34.9	− 4.2	53	25	10	19	23	4.57	+ 1.19	0.82	21.4	10	6	3	22	.....	Sanford B. Mayhew.
Bellingham (near)	do	107	2	34.0	.....	51	26	8	20	29	6.61	.....	1.10	22.0	19	5	7	19	.....	U. S. Bureau Plant Ind.
Blaine	do	57	16	33.2	− 2.1	52	25	9	19	24	6.66	+ 1.06	1.41	27.0	21	1	12	18	se.	J. M. Scott.
Blewett	Chelan	2,200	4	.....	.....	.....	.....	.....	.....	.....	6.90	.....	0.80	68.0	16	.....	.....	.....	.....	John Burmeister.
Bremerton	Kitsap	40	15	.....	.....	.....	.....	.....	.....	.....	5.22	− 0.88	0.80	.....	13	.....	.....	.....	.....	U. S. Navy Yard.
Brewster	Okanogan	1,620	3	18.6	.....	51	25	− 3	19	36	1.11	.....	0.28	15.5	6	12	4	15	se.	Mrs. H. F. Bertram.
Buckley	Pierce	.....	...	33.2	.....	47	26	18	5	19	9.63	.....	2.14	20.3	20	6	5	20	sw.	George C. Sears.
Bumping Lake	Yakima	3,400	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cedar River	King	535	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Centralia	Lewis	212	20	36.1	− 2.3	55	24	14	5	22	5.40	− 0.31	0.61	10.5	21	2	10	19	s.	I. S. Turner.
Cle Elum	Kittitas	1,930	14	22.4	− 4.6	48	26	− 16	5	33	4.42	+ 0.31	1.00	62.5	19	13	3	15	ne.	J. A. Palmer.
Clearbrook	Whatcom	140	10	29.8	− 3.4	51	25†	3	19	25	9.81	+ 4.02	1.60	64.5	14	5	4	22	ne.	George Gibbs.
Colfax	Whitman	2,300	24	26.2	− 4.6	54	4	1	6	42	4.03	+ 1.13	1.20	47.5	11	9	4	18	sw.	I. B. Doolittle.
Colville	Stevens	1,635	13	20.7	− 1.0	46	25	− 10	19	37	2.45	+ 0.22	0.63	24.1	10	8	4	19	sw.	W. L. Sax.
Colville Forest Station	do	.....	...	18.2	.....	50	25	− 13	5†	36	.....	.....	.....	.....	.....	12	0	19	nw.	U. S. Forest Service.
Conconully	Okanogan	2,300	13	17.8	− 3.8	50	25	− 10	19	35	1.75	+ 0.13	0.35	17.5	10	11	3	17	.....	William Baines.
Cowiche	Yakima	1,874	2	27.2	.....	56	25	7	5	32	1.10	.....	0.22	17.5	10	10	11	10	nw.	U. S. Reclamation Service.
Darrington	Snohomish	567	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Davenport	Lincoln	2,450	4	18.4e	.....	40e	2	− 14b	20	41e	2.64	.....	.....	26.0	...	15	2	14	.....	James L. Thayer.
Dayton	Columbia	1,700	27	30.4	− 2.2	54	2	5	5	30	3.23	+ 0.36	1.01	31.8	12	4	8	19	sw.	W. W. Hendron.
Deer Park	Spokane	2,050	2	19.8	.....	44	25	− 15	19	34	4.10	.....	0.80	27.5	13	15	3	13	nw.	Robert Allison, jr.
Detroit	Mason	30	5	35.5	.....	52	30	17	5	18	8.35	.....	1.85	9.0	15	5	3	23	s.	Walter O. Eckert.
Dixie (near)	Walla Walla	.....	4	.....	.....	.....	.....	.....	.....	.....	8.97	.....	1.65	82.3	16	6	1	24	sw.	T. Z. Andrews.
Douglas Lake	Skagit	440	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dryden	Chelan	960	3	.....	.....	.....	.....	.....	.....	.....	2.99	.....	0.48	43.9	17	10	13	8	nw.	Wenatchee Val. Gas & El.Co.
Duckabush	Jefferson	380	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
East Sound	San Juan	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ellensburg	Kittitas	1,571	25	22.4	− 2.4	50	30	− 4	20	34	1.06	− 0.41	0.19	19.5	11	15	2	14	nw.	R. Lee Barnes.
Ephrata	Grant	1,265	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Forks	Clallam	480	...	.....	.....	.....	.....	.....	.....	.....	15.14	.....	2.50	.....	18	.....	.....	.....	.....	R. H. Palmer.
Fort Simcoe	Yakima	1,427	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Gerome	Stevens	1,200	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Goat Lake	Snohomish	2,900	4	.....	.....	.....	.....	.....	.....	.....	16.06	.....	2.87	104.0	20	.....	.....	.....	.....	C. M. Mackintosh.
Gold Basin	do	1,360	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Gold Creek	Yakima	2,600	4	.....	.....	.....	.....	.....	.....	.....	1.85	.....	0.50	21.0	5	13	8	10	.....	John W. Anderson.
Goldendale	Klickitat	1,600	7	29.0	.....	51	2	9	5	21	3.40	.....	0.80	32.5	12	2	20	9	w.	Klickitat Co. Abstract Co.
Granite Falls	Snohomish	397	10	.....	.....	.....	.....	.....	.....	.....	10.72	+ 5.23	2.59	.....	...	5	4	22	e.	C. H. Cleaver.
Grays River	Wahkiakum	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Guler	Klickitat	2,200	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.9	....	7	6	18	.....	Frank Kuehnel.
Hanford	Benton	.....	...	25.8	.....	62	2	− 8	20	45	1.39	.....	0.40	12.0	....	4	15	12	nw.	F. Lee Bash.
Hatton	Adams	1,100	8	22.7e	.....	50	2	− 15e	20	35	1.36	.....	0.42	18.5	8	3	2	26	sw.	Dr. A. V. Marion.

TABLE 1.—*Climatological data for January, 1913. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
***Washington*—Con.**																				
Huntsville	Columbia	1,400	5	.....	.....	.....	.....	.....	.....	.....	7.17	.....	2.70	48.7	...	...	...	...	.....	Mrs. S. J. Hill.
Irene Mountain	Okanogan	2,700	4	.....	.....	.....	.....	.....	.....	.....	0.90	.....	0.14	13.7	10	6	12	13	.....	Mrs. Theo. Wheeler.
Kennewick	Benton	368	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Kent	King	53	....	34.8	.....	51	25	13	5	19	7.09	.....	1.28	18.3	16	4	0	27	s.	A. O. Jeffries.
Kettle Falls	Stevens	1,265	4	20.5	.....	44	25	− 6	19	28	2.56	.....	0.45	27.0	12	4	11	16	.....	H. H. Cole.
Kiona	Benton	430	7	28.0	.....	58	2	1	19†	41	3.60	.....	1.75	20.5	8	7	5	19	sw.	F. S. Hedger.
Kosmos	Lewis	775	7	32.8	.....	49	31	13	6	20	10.67	.....	2.20	62.0	22	7	15	9	ne.	J. A. Ulsh.
La Center	Clarke	250	16	35.0	− 2.3	55	28	15	5	26	7.72	+ 0.96	1.07	17.2	20	2	9	20	s.	Joseph Brothers.
La Crosse	Whitman	1,400	4	25.1	.....	52	2	− 16	20	50	4.39	.....	0.94	41.5	11	7	8	16	e.	M. E. Schreck.
Lake Chelalum	Kittitas	2,171	4	25.4	.....	45[j]	28†	4[j]	19	24[j]	8.54	.....	1.30	88.0	21	3	2	26	nw.	U. S. Reclamation Service.
Lake Kachess	....do	2,235	5	22.6[e]	.....	44[f]	30	− 3	5	24[f]	11.16	.....	2.00	111.0	15	10	5	16	w.	Do.
Lake Keechelus	....do	2,479	5	.....	.....	.....	.....	.....	.....	.....	14.82	.....	2.60	119.5	23	10	5	16	w.	Do.
Lakeside	Chelan	1,116	22	22.8	− 2.6	50	2	4	20	27	1.08	− 0.54	0.18	17.0	12	2	16	13	e.	W. H. Van Meter.
Laurel	Klickitat	1,900	4	.....	.....	.....	.....	.....	.....	.....	7.62	.....	1.00	70.4	23	9	14	8	w.	Mrs. Minnie E. Strout.
Laurier	Ferry	1,644	3	19.4	.....	44	25	− 7	5†	35	2.27	.....	0.51	29.7	14	7	5	19	e.	Mrs. J. S. Myer.
Lone Tree	Chehalis	9	4	40.4	.....	53	8	27	5	24	18.88	.....	4.22	3.5	24	2	17	12	se.	U. S. Engineer Corps.
Longmires Springs	Pierce	2,800	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94.0	...	...	...	...	.....	H. Greer.
Lost Creek	Okanogan	3,125	4	.....	.....	.....	.....	.....	.....	.....	1.00	.....	0.40	10.5	8	17	7	7	.....	P. H. Leese.
McConihe	Grant	1,072	2	21.0	.....	53	25	− 10	20	32	0.59	.....	0.21	6.4	7	12	5	14	n.	Lucien McConihe.
McCumbers Ranch	Yakima	2,182	3	.....	.....	.....	.....	.....	.....	.....	5.70	.....	1.30	48.0	18	9	7	15	sw.	Mary McCumber.
Moses Lake	Grant	1,070	2	.....	.....	.....	.....	.....	.....	.....	1.22	.....	0.41	14.5	5	15	0	16	.....	H. M. Flemming.
Mottinger	Benton	307	13	31.9	− 2.7	63	2	11	16	27	1.94	+ 0.80	0.66	8.5	9	13	6	12	e.	G. H. Mottinger.
Mount Pleasant	Clallam	500	2	32.5	.....	49	24	18	12	17	3.58	.....	0.90	13.0	14	0	10	21	.....	William M. Dorr.
Moxee	Yakima	1,000	21	24.7	− 4.1	65	2	− 1	19	45	3.64	+ 1.25	0.73	35.4	11	11	6	14	.....	H. B. Scudder.
Newport	Stevens	2,400	3	20.2	.....	45	25	− 12	6	35	3.43	.....	0.56	37.5	16	9	7	15	.....	C. M. Talmadge.
Night Hawk	Okanogan	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.5	9	...	...	...	.....	Steve Nagy.
North Head	Pacific	211	11	40.1	− 1.7	50	2	28	5	14	9.27	+ 2.59	1.70	1.3	22	4	4	23	e.	U. S. Weather Bureau.
Northport	Stevens	1,350	14	20.3	− 2.1	50	25	− 6	4	35	2.51	+ 0.58	0.92	32.2	17	13	15	3	.....	W. F. Case.
North Sundale	Klickitat	.....	4	30.8	.....	55	2	9	16†	28	3.15	.....	0.93	16.5	11	...	...	...	.....	Ruth J. Shepard.
North Yakima	Yakima	1,070	4	25.9	.....	60	2	7	5	37	0.88	.....	0.19	12.3	12	6	4	21	nw.	Albert Bender.
Odessa	Lincoln	1,540	10	20.6	.....	48	2	− 19	19	42	3.15	.....	0.70	25.5	10	9	15	7	ne.	H. W. Rieke.
Olga	San Juan	50	23	36.6	− 2.5	50	26	20	19	12	6.06	+ 2.63	1.24	9.0	18	4	9	18	se.	C. S. Willis.
Olympia	Thurston	45	35	35.7	− 2.8	52	25	16	5	17	9.48	+ 1.36	1.81	17.5	19	3[a]	5[a]	22[a]	sw.	M. O'Conner.
Omak	Okanogan	850	4	19.6	.....	52	25	− 11	19	36	1.20	.....	0.35	12.0	5	10	6	15	sw.	Saint John Umbrite.
Oroville	....do	922	3	21.4	.....	47	1	− 3	19	22	0.76	.....	0.30	7.6	8	19	5	7	s.	M. C. Jackman.
Peola	Garfield	5,000	4	.....	.....	.....	.....	.....	.....	.....	4.78	.....	0.90	64.1	18	15	4	12	sw.	Samuel Gruel, sr.
Pomeroy	....do	1,500	21	28.6	− 4.7	55	2	2	5†	32	5.07	+ 2.78	1.65	50.0	12	1	6	24	w.	Peter McClung.
Port Crescent	Clallam	259	18	34.4	− 1.6	48	25	22	5	16	5.95	+ 0.42	1.04	13.5	21	0	10	21	s.	U. S. Weather Bureau.
Port Townsend	Jefferson	80	23	36.6	− 1.9	51	26	24	12	14	2.39	0.00	0.63	1.4	21	1	3	27	se.	F. Plummer.
Prosser	Benton	661	....	28.4	.....	60	2	3	19†	37	1.25	.....	0.60	12.5	5	10	10	11	w.	E. L. Capps.
Pullman	Whitman	2,550	21	24.2	− 4.9	60	3	− 8	5†	42	4.95	+ 2.30	1.80	49.5	12	0	5	26	sw.	Agricultural College.
Queets River	Chehalis	16	2	35.6[c]	.....	49[c]	29†	23[c]	5	14[d]	13.90	.....	2.95	9.0	22	3[c]	6[c]	19[c]	e.	C. A. Bullard.
Quiniault	....do	300	6	36.0	.....	55	26†	21	5	25	20.84	.....	3.30	18.5	25	5	10	16	e.	A. V. Higley.
Republic	Ferry	2,628	13	16.9	− 5.0	47	25	− 12	13	34	1.31	− 0.36	0.34	17.5	11	18	1	12	w.	G. B. Stocking.
Rex Creek	Chelan	1,135	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Ritzville	Adams	1,825	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Robertsville	Klickitat	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Rock Lake	Whitman	1,910	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Rosalia	....do	2,425	21	24.5	− 3.9	45	2	0	13	30	3.15	+ 1.00	0.73	32.1	15	5	5	21	sw.	Hans Mumm.
Russells Ranch	Yakima	2,870	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Seattle	King	208	22	36.6	− 2.7	49	25	22	5	12	4.89	+ 0.37	0.96	11.5	21	2	6	23	se.	U. S. Weather Bureau.
Sedro Woolley	Skagit	38	16	33.0	− 4.4	47	25†	13	19	17	8.92	+ 4.30	1.75	12.0	24	7	3	21	.....	Mrs. H. L. Devin.
Sixprong	Klickitat	1,240	6	29.6	.....	56	1	10	6†	26	1.72	.....	0.51	13.5	10	4	7	20	ne.	C. E. Comstock.
Skagit Power Dam	Whatcom	510	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Snohomish	Snohomish	55	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Snoqualmie Falls	King	667	14	33.6	− 3.1	47	2†	16	5	16	8.74	+ 1.00	1.25	26.5	27	9	0	22	.....	O. N. Wiswell.
Snoqualmie Pass	....do	3,000	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	185.0	22	4	3	24	.....	G. R. Westcot.
Snyders Ranch	Okanogan	2,200	4	14.1	.....	46	24†	− 15	19	37	2.18	.....	0.78	25.0	10	11	15	5	n.	G. M. Snyder.
South Bend	Pacific	140	18	36.6	− 4.7	54	27	18	5	23	18.19	+ 5.62	3.15	.....	23	8	6	17	e.	Mrs. W. Buckingham.
Spokane	Spokane	1,943	32	24.3	− 2.4	47	2	2	19	29	3.67	+ 1.37	0.86	35.2	16	4	5	22	nw.	U. S. Weather Bureau.
State University	King	170	4	37.2	.....	46	25	26	5	8	4.41	.....	0.84	11.8	20	6	4	21	s.	University of Washington.
Stokes Ranch	Okanogan	2,670	4	.....	.....	.....	.....	.....	.....	.....	1.51	.....	0.31	20.1	11	8	19	4	w.	Chas. W. Gunn.
Sumner	Pierce	77	5	34.8	.....	52	25	13	5	23	7.76	.....	1.38	15.3	18	4	3	24	s.	H. E. Thompson.
Sunnyside	Yakima	740	18	27.4	− 2.3	63	2	0	20	43	0.72	− 0.26	0.15	13.2	12	9	4	18	sw.	U. S. Reclamation Service.
Tacoma	Pierce	213	27	36.1	− 2.0	50	25	18	5	16	7.44	+ 1.66	1.80	23.0	18	3	4	24	sw.	U. S. Weather Bureau.
Tatoosh Island	Clallam	86	28	38.7	− 2.5	49	1	28	19	16	11.74	− 0.42	2.63	4.1	26	1	9	21	e.	Do.
Tieton	Yakima	2,313	4	25.7	.....	55	31	3	5	32	2.55	.....	0.50	24.4	15	11	4	16	w.	U. S. Reclamation Service.
Touchet	Walla Walla	556	6	30.4	.....	62	2	− 3	20	46	1.54	.....	0.58	7.5	9	4	10	17	sw.	D. W. Dorrance.
Touchet Ridge	Columbia	2,500	4	.....	.....	.....	.....	.....	.....	.....	7.07	.....	1.26	85.0	16	11	4	16	sw.	Maude E. Bernard.
Trinidad	Douglas	900	9	22.6	.....	50	2†	0	20	31	0.90	.....	0.20	9.0	7	11	3	17	e.	J. C. Wheeler.
Vancouver	Clarke	100	38	37.2	− 0.4	56	2	17	5	19	5.36	− 0.60	0.97	13.7	17	1	5	25	se.	A. A. Quarnberg.
Vashon Island	King	40	24	36.3	− 2.1	50	25	21	5	14	5.85	− 0.01	1.14	7.5	28	7	1	23	s.	Gertrude McClintock.
Wahluke	Grant	410	9	25.8	.....	58	2	− 2	20	36	1.67	.....	0.40	16.7	8	6	4	21	.....	F. C. Koppen.
Wallace	Okanogan	4,000	4	.....	.....	.....	.....	.....	.....	.....	1.06	.....	0.23	17.2	11	16	8	7	s.	Geo. A. Wal ace.
Walla Walla	Walla Walla	1,000	29	32.0	− 1.2	60	2	12	5	27	2.52	+ 0.51	0.65	15.8	14	3	9	19	s.	U. S. Weather Bureau.
Washougal	Clarke	650	13	35.6	− 1.9	58	2	19	5	24	9.08	+ 1.52	2.30	17.0	17	7	0	24	w.	F. M. Grout.
Waterville	Douglas	2,624	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Wenatchee	Chelan	.....	....	25.2	.....	51	2†	− 3	20	33	1.60	.....	0.37	14.0	7	19	1	11	n.	A. A. Piper.
Wenatchee (near)	....do	1,169	14	21.5	− 3.9	50	2†	1	20	29	1.82	− 0.04	0.35	18.8	14	8	8	15	w.	George A. Pitcher.
White Salmon	Klickitat	325	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	.....
Wilbur	Lincoln	2,203	14	18.5	− 4.2	48	25	− 25	18	47	1.67	− 0.11	0.40	24.0	8	2	2	27	.....	Rollin J. Reeves.
Wind River	Skamania	1,300	2	31.4	.....	50	29	9	6	28	15.53	.....	2.38	99.0	15	7	4	20	sw.	U. S. Forest Service.
Winthrop	Okanogan	1,765	2	14.0	.....	48	25	− 12	22	34	1.64	.....	0.29	17.8	14	12	16	3	.....	Methow Trading Co.
Yacolt	Clarke	850	....	.....	.....	.....	.....	.....	.....	.....	14.87	.....	2.03	31.9	24	5	2	24	s.	C. R. Miller.
Yale	Cowlitz	375	6	33.3	.....	49	3	16	5	18	17.83	.....	2.30	30.5	22	6	1	24	e.	L. F. Williams.
Zillah	Yakima	800	1	31.8	.....	62	26	0	20	40	.....	.....	.....	.....	...	...	...	...	.....	A. S. Hillyer.
Oregon.																				
Albany	Linn	212	31	38.3	− 1.1	59	28	17	5†	26	5.69	− 1.27	1.93	0	21	...	...	...	s.	F. M. French.
Alpine	Benton	350	16	38.5	.....	56	2	15	6	18	8.27	.....	1.85	8.0	17	2	11	18	sw.	J. D. McPherson, jr.
Ashland	Jackson	1,963	29	32.0	− 6.5	48	19	12	6	24	3.48	+ 0.50	0.93	20.5	12	11	11	9	nw.	G. G. Eubanks.
Astoria	Clatsop	16	52	38.8	− 2.4	50	2†	24	5	18	15.16	+ 4.21	2.30	1.4	26	2	2	27	e.	Irving Club.
Austin	Grant	4,250	2	16.7[e]	.....	47[e]	26	− 33[e]	6	53[e]	2.97	.....	0.78	45.0	9	6[e]	2[e]	18[e]	w.	U. S. Forest Service.
Baker	Baker	3,466	23	21.4	− 2.5	44	25	− 10	6†	28	1.55	− 2.01	0.33	22.4	14	8	16	17	se.	U. S. Weather Bureau.
Bend	Crook	3,629	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	...	...	...	.....	Bend Bulletin.
Black Butte	Lane	1,200	12	34.0	− 3.9	51	2	11	5	24	9.35	+ 2.88	1.55	23.0	16	9	6	16	nw.	Wm. Harris.
Blalock	Gilliam	237	15	32.5	− 1.9	60	2	13	6†	23	2.57	+ 1.20	0.34	15.0	9	2	4	25	w.	Geo. W. Long.

TABLE 1.—*Climatological data for January, 1913. District No. 12*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon—Continued.																				
Brogan	Malheur	2,600	3	25.7	.....	48	3†	− 1	6	28	1.90	.....	0.60	19.0	7	10	7	14	n.	J. M. Addington.
Burns	Harney	4,157	22	20.4	− 2.9	48	31	− 13	5	45	1.55	+ 0.04	0.45	11.5	6	17	8	6	.....	J. C. Welcome, jr.
Cascade Locks	Hood River	100	23	34.4	− 2.0	55	3	18	5	21	14.73	+ 2.76	2.78	51.0	21	7	0	24	w.	Val. W. Tomkins.
Cazadero	Clackamas	503	4	37.2	.....	55	2	18	5	22	7.52	.....	0.95	26.0	22	3	4	24	se.	Alf Drill.
Clear Lake	Linn	3,030	...	27.2	.....	43	30	− 6	5	34	12.41	.....	2.00	113.5	22	11	0	20	.....	R. B. Grondahl.
Cliff	Lake	4,300	6	22.6	.....	47	29†	− 21	6	47	0.67	.....	0.15	13.0	9	6	10	15	sw.	John O. Green.
Condon	Gilliam	2,884	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Williams.
Corvallis	Benton	266	25	38.6	− 0.5	54	24	18	6	15	6.36	− 0.48	2.25	6.0	19	2	1	28	s.	Oregon Agricultural College.
Crescent	Klamath	4,400	1	23.5	.....	58	31	− 27	5	56	3.42	.....	0.86	48.5	18	11	12	8	sw.	U. S. Forest Service.
Dayville	Grant	2,200	19	31.8	− 3.3	54	25	1	6	29	1.36	− 0.02	0.40	8.2	9	6	15	10	se.	J. Campbell-Martin.
Deadwood	Lane	350	3	38.9	.....	51	24	21	5†	20	18.52	.....	3.08	4.0	21	5	5	21	s.	Jos. Slemmons.
Doraville	Columbia	600	11	33.6	− 1.5	49	2†	16	5	16	7.31	+ 0.12	1.03	36.7	25	4	5	22	se.	Jos. Hackenberg.
Drain	Douglas	300	11	39.0	.....	58	24	15	6	21	8.31	.....	1.36	0.5	19	2	10	19	sw.	Ira Wimberly.
Echo	Umatilla	625	9	31.8	.....	63	2	5	16	28	2.12	.....	0.80	12.5	7	6	6	19	w.	R. B. Stanfield.
Ella	Morrow	830	9	31.4	.....	58	3	1	16	36	1.77	+ 0.47	0.70	19.2	8	11	8	12	sw.	Carl F. Troedson.
Eugene	Lane	449	23	40.2	+ 0.3	55	23†	19	6	19	5.04	− 0.14	1.02	3.5	19	2	8	21	se.	Paul G. Bond.
Fairview	Coos	142	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Wm. Bettys.
Forest Grove	Washington	220	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pacific University.
Gardiner	Douglas	72	24	40.4	− 4.3	53	30	23	5†	19	12.81	+ 0.94	1.71	.....	22	.....	.....	.....	.....	Wm. S. Angus.
Glendale	do	1,441	9	37.8	.....	55	1	12	6	26	6.67	.....	2.10	19.0	13	12	12	7	w.	B. J. Simpson.
Glenora	Tillamook	575	22	33.3	− 3.7	49	2	15	5	17	18.24	− 4.31	3.00	11.0	16	5	3	23	nw.	Mrs. Jennie A. Reeher.
Gold Beach	Curry	40	12	42.6	− 3.1	58	30	27	5	18	11.35	− 1.38	1.30	0	18	13	14	4	n.	John W. Riley.
Grants Pass	Josephine	956	25	35.6	− 3.1	54	2	13	5†	22	7.93	+ 1.65	1.65	14.0	16	2	10	19	sw.	John B. Paddock.
Grass Valley	Sherman	2,381	12	.....	.....	.....	.....	− 3	5	56	1.86	+ 0.52	0.53	17.0	6	10	0	21	w.	Agent O.-W. R. & N. Co.
Gurdane	Umatilla	3,500	4	30.6	.....	46	3	4	5	17	0.14	.....	0.04	1.4	4	13	8	10	s.	Miss Belle Ely.
Headworks	Clackamas	719	11	34.4	.....	53	2	17	5	19	8.44	− 1.97	1.14	30.5	19	5	5	21	sw.	Portland Water Works.
Heppner	Morrow	1,950	23	33.2	+ 0.3	58	2	8	5	29	1.31	− 0.23	0.24	12.2	12	5	17	9	s.	Frank Gilliam.
Hermiston	Umatilla	451	6	30.4	.....	60	2	1	16	38	0.83	.....	0.28	7.2	7	2	13	16	.....	C. W. Kellogg.
Hood River	Hood River	300	23	32.2[a]	− 1.0	56[a]	2	12[a]	5	24[a]	4.35	− 1.66	1.20	12.0	11	11	3	16	w.	Edward W. Birge.
No. 2	do	485	1	33.2	.....	56	2	10	5	23	6.58	.....	0.90	41.0	19	11	5	15	w.	W. H. Lawrence.
No. 3	do	620	1	32.4	.....	56	2	15	5†	29	5.96	.....	1.15	46.5	16	4	19	8	e.	U. A. Newman.
No. 4	do	850	1	31.0	.....	56	2	11	20	27	6.59	.....	1.03	57.0	14	11	4	16	ne.	P. L. Smith.
No. 5	do	...	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Jarvis.
Huntington	Baker	2,165	12	25.7	.....	51	16	− 5	7	38	1.72	+ 0.18	0.50	23.0	7	5	5	21	nw.	Agent O.-W. R. & N. Co.
Jacksonville	Jackson	1,640	25	31.4	− 6.1	44	2†	9	6	19	5.25	+ 0.90	1.26	21.0	15	1	9	21	.....	E. Britt.
Joseph	Wallowa	4,400	24	23.0	− 0.3	48	25	− 11	6	42	1.00	− 0.68	0.40	10.0	5	8	0	23	s.	F. F. McCully.
Klamath Agency	Klamath	4,169	5	17.4	.....	39	2†	− 12	23	31	3.80	.....	0.90	38.0	8	13	9	9	nw.	N. D. Ginsbach.
Klamath Falls	Klamath	4,100	24	19.0	−11.0	42	3	− 6	23	27	3.57	+ 1.11	0.83	43.0	16	14	4	13	nw.	Augusta J. Hayden.
La Grande	Union	2,784	25	25.0	− 2.7	48	25	− 9	6	27	2.93	+ 0.97	0.49	37.0	18	9	9	13	nw.	W. A. Worstell.
Lakeview	Lake	4,825	30	21.6	− 6.6	47	27	− 8	6	36	1.04	− 1.54	0.20	12.0	7	11	6	14	s.	C. C. Gott.
McKenzie Bridge	Lane	1,400	12	30.2	− 5.2	44	3	6	6	27	13.04	+ 3.90	1.90	0	24	0	6	25	nw.	George Frissell.
McMinnville	Yamhill	182	26	37.2	− 0.3	55	24†	18	5	17	7.44	+ 0.23	1.33	10.5	21	4	1	26	sw.	M. E. Pettit.
Marshfield	Coos	34	12	40.3	− 3.9	58	26†	20	5†	28	12.60	.....	1.71	.....	22	9	1	21	sw.	U. S. Weather Bureau.
Meadow Brook Ranch	Hood River	850	1	32.2	.....	57	2	10	5	26	6.00	.....	2.00	63.5	9	9	17	5	sw.	John W. Palmer.
Medford	Jackson	1,425	3	33.0	.....	46	3	10	6	23	3.52	.....	1.00	17.0	19	3	11	17	nw.	U. S. Weather Bureau.
Merrill	Klamath	4,070	8	18.6	.....	41	2†	−15	23	39	1.35	.....	0.39	.....	6	5	11	15	.....	U. S. Reclamation Service.
Metolius	Crook	2,525	3	31.1	.....	56	26	0	5	30	0.79	.....	0.79	0	1	24	5	2	sw.	John A. Hoffman.
Miramonte Farm	Clackamas	195	25	37.2	− 1.3	53	2†	18	5†	20	7.15	+ 1.06	1.35	13.0	22	5	2	24	s.	G. Muecke.
Mount Angel	Marion	485	27	37.0	− 2.4	57	25	20	5†	21	6.07	− 0.75	1.20	0.9	19	4	7	20	s.	Dr. Urban Fischer.
Mount Hood	Hood River	1,450	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Isaac Beal.
Musick	Douglas	5,000	4	29.2	.....	55	29	3	5	35	18.32	.....	2.32	190.0	21	6	4	21	sw.	Alex Lundberg.
Newport	Lincoln	69	26	39.8	− 4.5	51	27	23	5	17	12.89	+ 2.92	2.23	1.0	21	8	2	21	se.	Wm. Mathews.
Odell	Hood River	1,000	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. A. Decker.
Ortley	Wasco	1,600	2	29.2	.....	51	2	11	5	22	4.97	.....	1.09	50.0	13	7	9	15	w.	L. D. Firebaugh.
Paisley	Lake	4,209	10	28.4	.....	53	24	− 1	6	36	0.89	.....	0.39	8.5	3	12	11	8	sw.	C. M. Sain.
Parkdale	Hood River	1,650	3	30.6	.....	56	31	7	5	29	8.00	.....	2.00	68.0	16	8	2	21	nw.	S. G. Babson.
Pendleton	Umatilla	1,070	24	32.0	.....	63	2	5	20	35	2.63	.....	0.47	15.5	13	5	12	14	sw.	E. F. Averill.
Pilot Rock	do	1,817	5	33.2	.....	58	2	5	6	40	1.99	.....	0.35	15.0	11	3	1	27	sw.	John P. McManus.
Pompeii	Clackamas	3,879	18	30.1	+ 0.2	52	27	10	4†	30	18.77	+ 8.31	2.10	119.5	21	4	2	25	sw.	E. Coalman.
Portland	Multnomah	57	43	38.1	− 1.0	54	2	22	5	19	6.25	− 1.24	1.29	11.3	20	2	4	25	sw.	U. S. Weather Bureau.
Prairie City	Grant	3,425	2	24.2	.....	48	25	−10	5	30	1.51	.....	0.41	17.3	16	5	8	18	nw.	A. M. F. Kirchheiner.
Prineville	Crook	2,864	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Summers.
Prospect	Jackson	2,800	7	31.0	.....	52	26†	4	6	33	8.15	.....	1.83	63.5	17	8	15	8	ne.	Chas. A. Lower.
Ramsey	Wasco	1,350	12	28.6	.....	50	3	8	19	30	2.51	.....	0.76	26.1	12	13	1	17	e.	Mrs. Iva B. Collins.
Range	Grant	3,500	5	28.9	.....	47	25	−14	6	30	2.35	.....	0.70	.....	12	13	3	15	.....	Mrs. Emma Arbuckle.
Redmond	Crook	2,990	2	37.3	.....	59	27	14	5	21	0.69	.....	0.30	5.5	6	11	16	4	nw.	T. G. Stevens.
Richland	Baker	2,350	12	25.8	− 0.3	50	13	− 3	6	30	1.35	.....	0.40	13.5	5	9	2	20	e.	L. G. Morgan.
Rio Hermoso	Crook	2,110	23	30.5[e]	.....	51	24	4	5	28	4.05	.....	0.60	23.0	10	14	4	13	w.	C. T. Hubbard.
Riverside	Malheur	3,000	14	25.4	− 2.7	50	12†	−13	6†	40	1.40	.....	0.30	11.0	7	12	9	10	s.	Mrs. Leah Fairman.
Roseburg	Douglas	510	35	38.4	− 2.4	58	24	17	6	19	5.76	− 0.35	2.28	1.5	17	1	16	14	s.	U. S. Weather Bureau.
Salem	Marion	120	23	38.8	− 1.5	53	25	22	6	13	4.36	− 1.30	1.67	6.0	18	5	0	26	se.	M. P. Baldwin.
Seneca	Grant	4,800	2	14.8	.....	44	24	−27	6	49	1.58	.....	0.21	.....	13	11	8	12	s.	E. J. Southworth.
Silver Lake	Lake	4,700	16	24.6	− 3.7	47	24	−11	6	33	1.37	+ 0.29	0.40	11.0	9	13	11	8	sw.	G. W. Marvin.
Siskiyou	Jackson	4,115	5	28.6	.....	53	31	8	5†	23	10.26	.....	2.23	116.5	18	9	2	20	sw.	U. S. Weather Bureau.
Sparta	Baker	4,150	22	20.0	.....	40	27	−11	7	41	6.10	.....	1.20	61.0	14	13	3	15	w.	J. A. Wright.
Stafford	Clackamas	400	17	36.7	− 1.8	52	25	18	5†	20	5.96	− 1.08	0.84	18.5	24	.....	.....	.....	sw.	John P. Gage.
The Dalles	Wasco	112	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Judd S. Fish.
Toledo	Lincoln	75	23	43.1	− 0.1	61	1†	18	5	37	13.68	+ 2.77	1.70	0.4	19	8	10	13	sw.	C. B. Crosno.
Umatilla	Umatilla	340	25	31.4	− 1.2	62	2	3	16	27	1.40	− 0.09	0.41	13.0	10	6	0	25	e.	Mrs. Helen T. Duncan.
Union	Union	2,787	2	26.9	.....	50	25	− 7	6	22	0.88	.....	0.19	5.9	15	8	11	12	s.	Robert Withycombe.
Vale	Malheur	2,242	21	24.2[b]	− 2.4	48[b]	15	− 8[b]	10	36[b]	0.97	− 0.44	0.23	8.0	7	12[b]	4[b]	7[b]	ne.	H. P. Osborne.
Van	Harney	3,506	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George Howe.
Vida	Lane	1,100	2	34.6	.....	51	28†	14	5†	21	10.68	.....	1.46	43.5	21	7	3	21	w.	W. H. Pendell.
Waldo	Josephine	1,900	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. M. Lewis.
Wallace Orchard	Polk	170	4	37.5	.....	53	2	17	5	21	3.95	.....	0.68	11.0	18	0	8	23	.....	Charles A. Park.
Wallowa	Wallowa	2,935	10	21.6	.....	51	2	−13	6	30	2.15	.....	0.24	29.3	16	7	4	20	nw.	L. J. Coverstone.
Wamic	Wasco	1,500	12	30.8[e]	.....	57[e]	26	0[e]	5	29[e]	1.72	.....	0.25	20.0	6	2[e]	5[e]	19[e]	e.	A. J. Swift.
Warmspring	Crook	1,500	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	George W. Robbins.
Weston	Umatilla	1,800	21	29.1	− 2.2	51	1	3	5	30	3.37	+ 0.78	0.62	27.5	10	2	8	21	se.	M. A. Baker.
Williams	Josephine	1,368	21	35.7	− 3.6	55	2	10	23	35	6.85	+ 0.60	1.80	17.0	13	11	3	17	n.	Francis J. Le Roy.
Yonna	Klamath	4,146	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Jacob Rueck.

[a], [b], [e], etc., indicate repectively 1, 2, 3, etc., days missing from the record.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 12, Columbia Valley.*

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Montana.																																	
Anaconda	Missoula			.04	T.				.06	.05			.06	*	.08	T.		*	.55	.21		.85	.03		.01					T.	.24	2.18
Butte	do			T.			T.		.05	.05			T.		T.	.05	.02	T.	.08				T.						T.	.05	.02	0.32
Columbia Falls	Flathead		*	1.00	*			*	*		*	.63		*	*	.54	*	*	*	.52	*	*	*		.40								3.09
Como	Bitter Root		.22	.12				.01	.04		.01	.04	.04			.06	.05		.05		.02				.02	.05							0.73
Dayton	Flathead			.75								.12	.68	.10		.20	.40		.20			.10	.25			.20							3.00
Deer Lodge	Missoula								.13				.18						.14				.03									.35	0.83
East Anaconda	do			*	.01			T.	.18	.06			.03	T.	T.	.01	T.	*	*	.19	T.	T.	T.		T.					T.		.02	0.50
Fortine	Kootenai	.04	.42	.20				.03	.07		.03	.03	.24	.06	.03	.12	.12	T.	.07		.35				.22								2.03
Hamilton	Bitter Root	T.		.13					.08	T.	T.		.15	T.	.05		.01	T.	.05	.02			T.		T.	.02				.01			0.52
Hat Creek	Missoula	.03	.05	.25	.10				.30	.05	.09		.06	.06	.05	.05	.09		2.00	T.			.08	T.								.05	3.31
Haugan	do	.07	.45	.16				.07	.16	.20	.10	.16	1.10	.39	1.03	.24	.10	.14	.69	.15	T.	.67	.11	.10	.14	.21							6.44
Heron	Columbia		.02	.36					.16	.03	.10	.32	.12	.21	.21	.07	.09	.08				.11	.08	.07	.19	.14							2.36
Kalispell	Flathead	T.	.21	.75				.04	.07		.01	.24	.16	.03	.24	T.	.05	.02	.28	T.	.11	.04			.32	.11								2.68
Libby	Kootenai	.01	.01	.38	.28		.01	.16	.22		.01	.04	.27	.24	.18	.18	.18	.10	.19	.11	.03	.09	.07	.01	.27	.02				T.			3.06
Missoula	Missoula			.26			.10	.27		.10	.02	.44	.20	.71		.16	.06	.03	.04		.17	.28		.18						T.		.04	3.06
Ophir	do		.59	1.25	T.				.20	.16	.10	.34	T.		T.	T.	T.	T.	.60	.30	.40	.30	T.		T.	.24	T.	T.		.15			4.63
Ovando	do		*	.40	.01			.04	.09		.04	.22	.25	.16	.72		.05	.39	.29	.08	.04	.14	.20	.13	.30	.05	.03					.05	3.68
Philipsburg	do	T.		T.	T.	T.	T.			.05	.05						.15		.20						T.						T.	0.45
Plains	Columbia			T.				.05	.10		T.	.20	.40	T.	.55	.30	.20	.05	.80		.10	.10	.10		.10							T.	3.05
Pleasant Valley	Kootenai	*	.50	.25			.01	.07	.12		.02	.12	.34	.16	.30	.15	.01	.15	.30	.03	.10	.03	.05		.08								2.79
Polson	Flathead			.56										.21	.09	.02		.12							.10	.33							1.43
St. Ignatius	do			.16								.15	.19	.06					.20														0.76
Saltese	Missoula																																
Stevensville	Bitter Root	T.		.10				T.	.11	.02	.02	.03	.12	.12	.82		.05	.04	.20				.02			.01						T.	1.66
Thompson Falls	Columbia	T.	.26	1.36				.01	T.		T.	.14	.40	.16	.21	.13	.08	.04	.39	T.	.01	.29	.02	T.	.26	.45	T.							4.21
Trout Creek	do																																
Willow Glen Stock Farm.	Missoula																																
Wyoming.																																	
Afton	Snake									.08		.10	.04				.09			.11			.05		.05							.10	0.62
Alta	do			T.					.18	.30	.37		.26		.12				.16	.09			.22		.08	.05						.17	2.00
Bechler River	do																																
Bedford	do									.26	.08	.05	.19	.06				T.	.14	.04		T.	.12	.16								.21	1.31
Moran	do	.02	.15	.05					.28	.16		.16	.51	.14	.02	.05	.24	.16	.28	.04	.14	.38	.11	.10								.14	3.13
Snake River	do																																
Nevada.																																	
San Jacinto	Snake									.20													.05										0.25
Utah.																																	
Standrod	Raft	.07		T.	.01					.05	.02		T.				.06	.03		.05			.02										0.31
Idaho.																																	
Albion	Snake																																
Almo	do									.12									.04	.03						.08							0.27
American Falls	do								.82	.20	.72		.81										.48										
Arrowrock	Boise							.12	.36	.12	.08	.30	.63				.27	.22				.40	.25										2.75
Blackfoot ||	Blackfoot								.55	.12	.02	T.		T.			.12	.03				.05	T.		T.						T.	0.89
Blackfoot Dam	do				.08				.15	.08	.09	.08	.13	.09				.34	.40	.23			.17		T.		T.		T.				1.84
Bogus Creek	Payette		T.	T.					.11	.18	.14	.45	.37	.24			.40	.26	T.			.22	.20		.11							T.	2.68
Boise	Boise			T.				.02	.12	.14	.06	.16	.30	.01		.18	T.	.08	.01	T.		.11	.11		.04	T.				T.			1.34
Bonners Ferry	Kootenai	.09		.46									.33	*	.67	.35				.40					.50	.12	.25						3.17
Boulder Mine	Boise	.04	.12					.10	.82	.14		.18	1.60	.57		.10	.43	.42	.42	.07	.42		.37		.11								5.91
Buhl	Snake			T.	T.	T.			.10	.10		T.	.30	T.	T.			.15	.05	T.	.05												0.75
Caldwell	Boise								.20	.10	.03	.05	.02	.13			.02	.04		T.		.13	.06		.14								0.92
Caldwell Experiment Station.	do							.04	.22	.18	.02	.56	.05			.02						.14	.09		.13								1.45
Cambridge	Weiser								.70			.35	.80	.58	.05		.20	.90	.20			.40	.35										4.53
Cedar Creek Dam	Snake			.12	.29	T.			.10	.17	.09												.16										0.93
Chesterfield	Port Neuf								.18	.30		.15							.40	.19			.05	.07								.03	1.37
Clarks Fork	Pend Oreille		.05	.41			T.		.60		.04	.38	.70	.14	.09	.15	.14	.06	.34		.03	.25	.13	.13	.67	.80							5.11
Clyde	L. River Reg																																
Council	Weiser		T.	.02	.13			T.	.60	.01		.40	.62	T.	T.	.55	T.	.48	1.75		T.	1.00	.38		.30								6.24
Culdesac	Clearwater			.12	.71			.17			.02	.24	.48	.30				.13	.18			.37	.38		.15								3.25
Deary	do																																
Dent	do																																
Driggs	Snake	T.	.05	T.	T.				.30	.40	.45	.30	.08	T.	.05				T.			.60	.18									.10	2.51
Emmett ||	Payette								.07	.30	.02	.01	.05			.01	T.	.40				.40		.10									1.36
Forney	Salmon																																
Garnet	Snake									.30									.05														0.35
Glenns Ferry	do				T.				.10	.25			.30	.35				.15	.03				.30										1.48
Gooding	Wood-Malad				.01			T.	.20	.07	T.	T.	.27	.03			.03		.01	T.			.01		T.								0.63
Grand Forks	St. Joe	.08	.98	1.86	T.		T.	.17	.34	T.	.08	.82	1.03	.40	.68	.32	.15	.31	.68	.17	.02	.62	.27	.11	.98	.62	.02				T.		10.71
Grandview	Snake			.20					.15	.25	T.					.05			.05					T.									0.70
Grimes Pass ||	Boise	.05	.02	.04	T.			.65	.18	.16	.02	.75	.44	.13	T.	.41	.38	.40	.16	T.	.13	.40	T.	.10	.03								4.45
Guffey	Snake			.02	T.			T.	.09	.16	.06	.07	.06	T.		T.	T.	T.				.02			.06								0.54
Hailey	Wood-Malad	T.		T.					.67	.13	T.	T.	.32	.49	.17	.21	.26	.29	.80			.11	T.										3.45
Hollister	Snake	.03		T.	.04	.15			T.	.12	.08		T.					T.	T.	T.		T.	.07		T.	T.							0.49
Hot Spring	Bruneau				T.				.10	.20									.06	T.			T.										0.36
Idaho City	Boise																																
Idaho Falls	Snake								.32	.29	.02	.05	.08	.03			.15	.03					.13		.10							.04	1.24
Indian Cove	do																																
Indian Valley ||	Weiser								.50	.05	T.	T.	.55	.17	.03	.03	.12	.13	.04				.33	.65		.07	.07						2.7
Irwin	Snake																																
Kellogg ||	C. d'Alene	.10		1.20	.11			.04	.12	.01		.61	.82	.07	.36	.35	.10	.17	.53	.05		.25	.25		.53	1.02							6.69
Kilgore	Lost River Region.		.10		T.			T.	.30	.40	.20	.30	1.50	.01	T.	T.	.15	T.	.30		T.	T.	.10	T.		.25							3.61
Kirkham	Payette		.23	.01				.35	.81	.11	.12		.25	.82	.56	.10	.25	.34	.43		.50	.24			.19								5.31
Kooskia	Clearwater				1.05			.30			.10		.37	.60	.65			.05	.04			.03	.30	.03	1.00								4.52
Lakeview	Pend Oreille	.42		.06					.28		.16	.40		.42	.20		.30	.25	.20		.18		.19	.40									3.46
Landore	Snake	.09		.30	.30				.90		.70	1.10	.90	.30		.50	.80	1.00	.20		.40	.25			.20								7.94
Leadore	Salmon																																
Lewiston	Clearwater			.19	.13			.01			.06	.13	.24	.09	.02	T.	.02		.06		.10	.97	.25	.03	.03								2.33
Little Camas	Boise	.02		.06	.01				1.25	.15	.01		.76	.30		.02	.19	.14	.18	.02		.27	.11		.08								3.57
Loon Creek	Salmon			T.	.12			T.	.25	.04		T.	.14	.14	.07	.11	.18	.15	.60	T.		.09	T.		.07								1.96
Mackay	Lost River Region.								.20	.10				.20			.30		.55						.10								1.45
Meridian	Boise			T.	T.			.02	.06	.10	.08	.03	.40	.02			.08	.10	.03	.02		.12	.14		.04	T.							1.24

TABLE 2.—*Daily precipitation for January, 1913. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Idaho—Continued.																																	
Mesa‖	Weiser																																
Middle Fork	Clearwater		.05		.50				.24	.05		.16	.06	.50	.35	1.10			.25	.36	.08		.77	.55	.05	.64							
Milner	Snake			.02						.15	.01	.05		.24					T.	.01			.03			T.							0.51
Moscow	Palouse		.37	.15	.30	.15			.15	.30		.32	.35		.20	.20	.10	.12	.80							.30		.82					
Mountainhome	Snake		T.					T.	.11	.16	.06		.09	.09			T.	T.	.04	.10		.08	.06		T.	.03							0.82
Murtaugh‖	do			.06						*	.20			.05									*	.06								0.37
New Meadows	Salmon																				.06	.13		.03					T.			
Nezperce	Clearwater			.38	.24							.08	.36	.54				.08	.16		.33		.46									2.63
Oakley	Snake	.05								.10	.10								T.													0.25
O'Hara Bar	Clearwater																															
Orofino	do		T.	.31	.20			.22			.20	.37	.63	.33	.60		.04	.09	.04	.12	.03	1.73	.37	.05	.77							6.10
Payette	Payette			T.	T.			.03	.15	T.	.03	.04	.07	.21		T.	.01	.10	T.			.25	.12		.26							1.27
Pierson	Salmon							.21	.18		.13																					0.52
Pine	Boise			.17					.72	.24			1.50	.70	.38	.26	.13	.07	.65	.27	.08	.69			.52						T.	6.38
Pleasant Valley	do				T.			.02	.03	.03	.11	.10	.04	.01			.09	T.	.01	.01		.03	.03									0.41
Pocatello	Port Neuf				.01			T.	.23	.07	.07	.01	.05	T.			.14	.06	.04	.02		T.	.11		T.						T.	0.81
Pocatello Nursery	do																															
Poplar	Snake									.18	.29												.22									0.69
Porthill	Kootenai		.07					.22	.30			.07		.22	.07	.30	.08	.15	.07		.15	.05	.10	.16	.08	.18							2.27
Powers' Ranch	Boise	T.	T.	T.				.50	.52	.10	T.	.06	.98	.72		T.	.60	.30	.20	T.		.60	T.		T.							4.58
Priest River Experiment station:																																
No. 1	Pend Oreille																															13.74
No. 2	do																															13.62
No. 3	do			.13				.33	.55		.03	.14	.40	.32	.13	.15		.08	.20		.19	.05		.27	.80							3.77
Pyle Creek	Payette	T.	.13					.10	.81	.03	.03	.07	1.20	.44	.04		.47	.20	.39	T.		.66	.56		.14							5.27
Rattlesnake Creek	Boise	.03	T.	.10	T.			.08	.40	.15	.01	.01	.65	.30	T.	.01	.15	.16	.06	.01		.33	.23		.05	.05						2.78
Richfield	Wood-Malad			T.	T.	T.			.19	.07	T.	T.	.35	.06			T.	.05	.25			T.	.13		T.							1.10
Roseberry	Payette																															
Roseworth	Snake				.07				.26	.02			.02					T.	.03		.03		.03									0.46
Rupert	do				.01				.01	.17	.02	.01	.16			.01	T.		.01	T.			.05		T.							0.45
St. Anthony	do																															
St. Maries	St. Joe																															
Salmon	Salmon		T.	.04				T.	.08	.12	.02		T.	.01	T.		.02	.10	.05	.02		.01	.01		.12	T.				T.		.03	0.63
Sandpoint	Pend Oreille		.18	.24			T.	.35	.57		.04	.22	.35	.32	.18	.20	.05	.05	.20		.30	.10	.04	.20	.90	.20							4.69
Sheep Hill	Boise		.12	T.				.08	1.22	T.		.20	1.80	T.		T.	.44	.40	.48	T.		.50	.40		.25							5.89
Shoshone	Wood-Malad				.03	T.		T.	.25	.07	T.	T.	.42	.03			T.	.10	.17	T.	T.	T.	.14		T.							1.21
Silver City	Owyhee		.02		.02			.06	.43	.11	.05	.05	.47	.12		.07	.15	.13	.18	.10		.07	.07		.17							2.27
Smith Prairie	Boise	.03						.03	.40	.18	.12	.07	1.08	.17		.05	.23	.12	.11			.32	.16			.11						3.18
Soldier Creek	Wood-Malad							.03	1.25	.19		.09	.56	.79	.45	.09	.25	.28	1.76			.28	.07		T.							
Spirit Lake	Pend Oreille		.05				T.	.50	1.20		.01	.35	.41	.51	.05	.40	T.	.01	.41		.11	.10		.30	.81	.50							5.72
Springfield	Snake				.01				.03	.02			T.				.21						T.	.04								0.31
Spring Hill	Boise								.35	.30			.71	.11			.17		.05				.64	.08								2.41
Sugar‖	Snake								T.	.33	.07	.07		.07									.10		T.	.12				T.		0.76
Sunnyside	do			.12							.07	.06	.12	.14							.06		.09		.06							0.72
Tripod Mountain	Payette				.03			.11	.39		.13	.69	.43	.03		.15	.15	.11				.52	.40		.12							3.26
Twin Falls	Snake		T.		.30	.10			.11	.23	.07	T.	.17					.05	.06	.08			.02		T.							1.19
Vernon	do		.02						.25		.20			T.								.05		T.	.30					T.	.05	0.87
Wallace	C. d'Alene	.07	.20	1.09				.07	.26		.09	.40	.85	.42	.57	.24	.17	.27	.82	.10	T.	.35	.16	.03	.41	.74							7.31
Weiser	Weiser			T.				.05	.28	T.	T.	.18	.19	.24		T.	.36	.24	.05			.42	.19		.31							2.51
Wendell	Wood-Malad				.04				.26	.19			.32					.18	T.	.04			.08									1.11
Washington.																																
Aberdeen	Coast	.55	2.07	.58			.10	1.07	.74	.36	.09	1.52	.64	1.16	.32	.42	.24	.18	.14	.50	1.11	.11		.43	2.52	1.39				.21			16.45
Anacortes	Puget Sound																															
Anatone	Snake																															
Baker	Puget Sound	.20	.49	.25			.50	2.18	.25	.30	.10	1.45		.40	T.	.25		.80	.05		.65	.30	.15	2.00	2.73	.84				.30			14.19
Bellingham	do		.50	.52			.25			.72		.50		.32		T.	.47	.42			.05	T.	T.	T.	.82						T.	4.57
Bellingham (near)	do		.48	.47			.10	.40	.29	.50		.80		.30	.14	.24	.10	.68	.09		.10	.19		.11	1.10	.49					.03		6.61
Blaine	do	.01	.85	.31			.19	.94	.15	.16		.73	.04	.16	.23	.03	.12	.15	.08	T.	.05	.20	T.	.28	1.41	.56				T.		.01	6.66
Blewett	Wenatchee	.50	.08	.70	.60			.60			.20	.70	.80	.50	.10	.40	.20	.30	.20		.70				.32								6.90
Bremerton	Puget Sound		.28	.60				.32		.70		.12		.80	.24		.10				.38			.10	.74	.80				.04			5.22
Brewster	Columbia							.15		.26		.10			.20	.28		.12	T.		T.				T.								1.11
Buckley	Puget Sound	.01	2.14	2.02			.20	.56	.10		.04	.62	.97	.08	.15		.14	.08	T.	.15	.18	.06		.28	1.09	.56				.20			9.63
Bumping Lake	Yakima																															
Cedar River	Puget Sound																															
Centralia	Coast	.05	.35	.25			.05	.33	.50	.08	.06	.20	.35	.30	.13	.15	.31	.30	.10	.60	.50			.02	.16	.61							5.40
Cle Elum	Yakima		1.00	.30	.10			.15	.25	.07	.06	.15	.50	.15	.04			.10	.15	.25	.18	.25		.10	.35	.27							4.42
Clearbrook	Puget Sound	.20	1.07	.57	.05		.87	1.20			1.60	1.20	1.20	1.00												.40	.40	.02			.03	9.81
Colfax	Palouse				.20			.22	.10		.20	.31	1.20	.30	.08				.68			.53			.20								4.03
Colville	Columbia						T.	.35	.04		.12	.17		.09	.06	.63			.12					.35	.52								2.45
Conconully	Okanogan			.10				.25	.05	.25		.10		.25		.35	.07	.18			.15				T.								1.75
Cowiche	Yakima		T.	.09				.04	.03	.06		.14	.22	.09		.15	.06		.22			T.			T.								1.10
Darrington	Puget Sound																															
Davenport	Columbia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2.60	.04							2.64
Dayton	do		.01	.19	.01			.04	T.	T.	T.	.17	.53	.17	.07	.06		T.	.67	T.		1.01	.30		T.								3.23
Deer Park	Spokane						.02	.73	.77	.03		.40	.33				.14		.33		.11	.13	.02	.29	.80								4.10
Detroit	Puget Sound	.05	.34	.47				.84	.16	.32		.45	1.46	.24	.13			.48			.22	T.		.17	1.85	1.17							8.35
Dixie (near)	Columbia	T.		.59	.18			.44	.44		.20	.55	.70	.40	.40	T.	T.	.20	.75	.10		1.53	1.65	.82		.02				T.			8.97
Douglas Lake	Puget Sound																															
Dryden	Wenatchee	.04	.16	.48				.36	.02	.08		.19	.44	.24	.04	.13	.09	.03	.09	T.	.20				.35	.05							2.99
Duckabush	Puget Sound																															
East Sound	do																															
Ellensburg	Yakima			.11				.09		.10	.01	.14	.19	.16		.15	.03	.04	T.		T.	.04											1.06
Ephrata	Columbia																															
Forks	Coast	.25	1.71	.63			.26	1.37	.22	.57	.04	.19		1.52	.48	.78	.26		*	*	1.73		.53	.65	2.50	1.45							15.14
Fort Simcoe	Yakima																															
Gerome	Columbia																															
Goat Lake	Puget Sound	.23	.72	1.62	1.66			1.06	1.18	.23	.48	.56	.60		.54	.52			.48	.46		.65		.32	1.55	2.87	.18				.15		16.06
Gold Basin	do																															
Gold Creek	Yakima			.25				.40					.50					.40				.30											1.85
Goldendale	Columbia		.02					.05		.10	.40	.40	.60			.10		.15	.80	.15	.15			.48									3.40
Granite Falls	Puget Sound	.10	1.40	.56	.02		.54	.91	.08	*	*	.96	.10	.46	.41		.30	.20	.09		.22	.09	.05	.72	2.59	.49				.38	.02	.03	10.72
Grays River	Coast																															
Guler	Columbia																															
Hanford	do			.08			*	.24		.15		*	.38	.07		.07		*	.40			T.											1.39
Hatton	do			.07				.37	.11	T.			.42			.06		.28				.03			.02								1.36
Huntsville	do				1.20		1.20				.20	.22	.65	.20				T.				2.70			.80								7.17
Irene Mountain	do			.04				.10		.11		.06	.11	.14		.13		.09			T.			.06	.06								0.90
Kennewick	do																															
Kent	Puget Sound	T.	.64	1.28			.11	.90	.06			.47	1.17	.30			.16	.15			.10	T.		.19	.88	.61				.05	.02		7.09

TABLE 2.—*Daily precipitation for January, 1913. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
***Washington*—Con.**																																	
Kettle Falls	Columbia	....	....	....	....	....	....	.36	.20	.20	....	.10	....	.20	.10	.40	.05	....	.10	....	.10	....	....	.30	.45	....	....	....	....	....	....	....	2.56
Kiona	Yakima	....	....	....	....	....	....	.35	....	.05	.05	.50	....	.10	....	....	....	.05	.75	....	1.75	....	....	....	....	....	....	....	....	....	....	....	3.60
Kosmos	Columbia	.22	2.20	1.14	....	....	.10	.21	.38	.33	.11	.49	.63	.26	.09	.30	.39	.30	.38	.37	.11	....	....	1.39	1.00	.21	....	....	....	.06	....	....	10.67
La Center	....do	.01	.40	.05	....	....	.39	.63	.04	.36	.13	.65	.53	.17	T.	T.	.85	.55	.30	.04	1.07	.58	T.	.69	.27	....	....	....	....	.01	....	....	7.72
La Crosse	Palouse	....	....	.18	.05	....	....	.28	....	....	.20	.61	.65	.11	.09	T.	....	T.	.88	....	....	.94	....	T.	.40	....	....	....	....	....	....	....	4.39
Lake Clealum	Yakima	.31	.21	1.08	.21	....	T.	.72	.38	.15	.21	.53	1.30	.17	.04	T.	.12	.15	.57	.16	.62	.13	T.	.12	1.12	.24	....	....	....	T.	....	....	8.54
Lake Kachess	....do	....	2.00	1.09	.12	....	....	1.20	.38	....	....	.78	1.30	....	....	....	....	.50	.38	.25	.49	.29	....	.12	1.54	.72	....	....	....	....	....	....	11.16
Lake Keechelus	....do	....	2.60	1.50	.49	....	.13	1.51	.49	.26	.05	1.05	1.06	.13	.07	.02	.14	.43	.32	.40	.98	.11	....	.45	1.89	.65	....	....	....	.09	....	....	14.82
Lakeside	Columbia	T.	....	.10	....	....	....	.10	T.	.12	T.	.09	.11	.17	....	.18	.03	T.	.05	....	.03	....	....	.08	.02	....	....	....	....	....	....	....	1.08
Laurel	....do	.08	.06	.56	.01	....	.01	1.00	.34	.16	.02	.72	.70	.65	.18	.12	.36	.65	.54	.25	.14	.76	....	.02	.23	.06	....	....	....	....	....	....	7.62
Laurier	Kettle	....	....	....	....	....	T.	.37	.11	.05	....	.12	.03	.12	....	.35	.04	.14	.03	....	.05	....	....	.28	.51	.07	....	....	....	....	....	....	2.27
Lone Tree	Coast	.57	2.42	.42	T.	....	.01	1.36	.63	.59	.02	1.80	.55	1.29	.33	.78	.34	.08	.12	.42	.10	.50	.32	.97	4.22	.98	....	....	T.	.06	T.	....	18.88
Longmires Spring	Puget Sound	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lost Creek	Columbia	....	....	....	....	....	....	.05	.10	.10	....	.05	.10	.10	....	.40	....	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00
McConihe	....do	....	....	....	....	....	T.	.21	.06	.02	....	T.	.10	.07	....	.04	....	T.	.09	....	....	....	....	....	....	....	....	....	....	....	....	....	0.59
McCumbers Ranch	....do	....	....	....	.05	....	....	1.30	.10	.15	.05	.40	.60	.40	.05	.20	.50	.65	.05	.40	.50	.15	....	....	.10	.05	....	....	....	....	....	....	5.70
Moses Lake	....do	.01	....	....	....	....	....	.36	....	.03	....	.41	....	....	....	....	....	....	.41	....	....	....	....	....	....	....	....	....	....	....	....	....	1.22
Mottinger	....do	....	....	....	....	....	....	.37	.08	....	T.	.13	.30	.12	....	.06	....	.66	....	....	....	.06	....	....	.16	....	....	....	....	....	....	....	1.94
Mount Pleasant	Coast	....	.39	.30	....	....	T.	.29	.15	.15	.10	.05	.20	.30	T.	T.	T.	T.	.10	.10	T.	.40	....	T.	.90	.15	....	....	....	T.	....	....	3.58
Moxee	Yakima	....	....	.10	.03	....	T.	.08	.15	.10	.18	....	....	....	....	.63	.55	.54	.55	.73	....	....	....	....	....	....	....	....	....	....	....	....	3.64
Newport	Pend Oreille	....	.07	.20	....	....	.03	.34	.46	....	....	.24	.41	.25	.09	.05	....	.04	.23	....	.12	.08	....	.26	.56	....	....	....	....	....	....	....	3.43
North Head	Coast	.30	.76	.30	....	....	.32	.57	.50	.23	.01	1.13	.75	.37	....	.52	.18	.10	.02	.09	.55	.10	.04	.71	1.69	.03	....	....	....	....	....	....	9.27
Northport	Columbia	....	.04	....	....	....	.23	.29	.04	T.	.06	.17	.18	.03	.04	.23	.06	.06	....	.03	.02	T.	.01	.92	.10	....	....	....	....	....	....	....	2.51
North Sundale	....do	....	....	....	.22	.16	....	....	....	.04	....	.02	.09	.65	.20	....	....	....	....	.93	.13	....	.49	....	....	.22	....	....	....	....	....	....	3.15
North Yakima	Yakima	....	....	.08	.04	....	T.	.03	.06	.03	T.	.10	.10	.09	....	.08	.04	.04	.19	T.	....	T.	....	....	....	....	....	....	T.	....	....	....	0.88
Odessa	Columbia	....	T.	.15	....	....	T.	.70	.20	T.	....	.30	.55	.10	....	.30	....	T.	.30	....	T.	.10	....	T.	.45	....	....	....	....	....	....	....	3.15
Olga	Puget Sound	.55	.26	.21	.05	....	.25	.40	.12	.10	.20	....	1.24	.40	....	.05	....	.24	....	....	.21	.15	T.	.23	.95	.45	....	....	T.	....	....	T.	6.06
Olympia	....do	....	.65	.28	....	....	.03	.86	.38	.21	....	.80	.95	.25	.50	....	.27	.48	.09	.20	.40	.04	T.	.30	1.81	.98	....	....	....	....	....	....	9.48
Omak	Okanogan	....	....	T.	....	....	....	.10	....	.35	....	T.	....	.25	....	.25	.25	....	....	....	T.	....	....	....	....	....	....	....	....	....	....	....	1.20
Oroville	....do	....	....	.02	....	....	....	.05	.30	....	....	....	....	.12	....	.15	.05	....	....	....	.05	....	....	....	.02	....	....	....	....	....	....	....	0.76
Peola	Snake	....	.02	.64	.17	....	....	.01	T.	....	.06	.38	.65	.11	....	.08	.07	.08	.59	.15	.05	.90	.72	....	.03	.07	....	....	....	....	....	....	4.78
Pomeroy	....do	....	....	.15	....	....	....	....	....	....	.10	.20	.60	.40	.20	.05	T.	T.	.90	.20	T.	1.65	.60	....	.02	....	....	....	....	....	....	....	5.07
Port Crescent	Coast	.55	.23	.30	....	....	.04	.91	.05	.29	.02	.18	.19	.76	.18	.19	.09	.15	.02	T.	.32	.14	....	.31	.97	....	....	....	.06	....	....	....	5.95
Port Townsend	Puget Sound	.01	.58	.20	.02	.02	.02	.04	.11	.06	....	.02	....	.22	....	.06	.02	.04	.01	.13	.07	T.	....	.03	.63	....	....	*	.10	....	....	....	2.39
Prosser	Columbia	....	....	....	....	....	....	.20	....	....	.05	T.	.30	.10	....	T.	....	T.	.60	....	....	T.	....	....	....	....	....	....	....	....	....	....	1.25
Pullman	Palouse	....	.10	.30	....	.10	....	....	.10	....	.20	....	.40	1.80	....	.10	....	.10	1.00	....	....	.45	.30	....	....	....	....	....	....	....	....	....	4.95
Queets River	Coast	T.	.54	....	....	....	.16	1.27	1.21	.48	.03	.65	.04	1.14	.37	1.00	.21	.28	.09	.11	.52	.32	.08	1.01	2.95	1.11	T.	T.	T.	.33	T.	T.	13.90
Quinault	....do	.20	2.23	.50	....	....	.46	1.20	1.30	.96	.04	1.27	.10	1.37	.50	.55	.54	.50	.20	.22	1.35	.28	.05	1.50	3.30	2.00	....	....	....	.12	.10	....	20.84
Republic	Kettle	....	....	....	....	....	....	.18	.08	.10	T.	.08	.10	.11	....	.34	T.	.07	.03	....	T.	....	....	.10	.12	....	....	....	....	....	....	....	1.31
Rex Creek	Columbia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ritzville	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Robertsville	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rock Lake	Palouse	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rosalia	....do	....	.10	....	....	....	....	.08	.19	....	.03	.50	.73	.18	.22	.04	.03	.06	.40	....	....	.22	....	.10	.27	....	....	....	....	....	....	....	3.15
Russells Ranch	Yakima	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Seattle	Puget Sound	.17	.53	.49	....	....	.55	.33	.18	.11	T.	.64	.02	.30	....	.04	.16	.03	T.	....	.23	.01	.01	.08	.94	.03	....	....	....	.01	....	.03	4.89
Sedro Woolley	....do	.05	1.75	.67	....	....	.30	.42	.45	.68	.05	.40	.06	.05	.12	.08	.02	.17	....	....	.24	.22	.13	.69	1.38	.57	.02	....	....	.32	....	.08	8.92
Sixprong	Columbia	....	....	.10	....	....	....	.14	....	....	....	.04	.51	.17	....	....	....	.09	.51	.04	....	.09	....	....	.03	....	....	T.	....	....	....	....	1.72
Skagit Power Dam	Puget Sound	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Snohomish	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Snoqualmie Falls	....do	.01	1.02	1.17	.02	....	.11	.50	.22	.12	.03	.89	.96	.05	.15	.01	.18	.18	.02	.04	.30	.09	.10	.36	1.25	.84	.01	T.	.01	.10	T.	T.	8.74
Snoqualmie Pass	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Snyders Ranch	Columbia	T.	.78	.18	....	....	T.	.28	T.	.05	T.	.17	.07	.13	T.	.20	T.	.08	T.	....	.24	....	....	....	....	....	....	....	....	....	....	....	2.18
South Bend	Coast	.02	2.34	.90	.07	....	.03	.94	1.18	.77	....	.94	1.20	1.34	.26	.30	.28	.43	.02	.50	1.06	.20	.06	.20	3.15	2.00	....	....	....	....	....	....	18.19
Spokane	Spokane	....	.01	.18	....	....	.09	.63	.09	....	.08	.72	.24	.34	.02	.14	T.	.27	.14	....	T.	.11	....	.37	.24	T.	....	T.	....	....	....	....	3.67
State University	Puget Sound	....	.21	.84	T.	....	T.	.51	.01	.28	....	.11	.70	.08	.10	T.	.06	.12	....	....	.07	.15	.01	.12	.30	.64	....	....	....	.03	.04	.03	4.41
Stokes Ranch	Columbia	....	.27	.22	....	....	....	.05	.04	.04	....	.12	....	.22	.03	.12	....	....	....	....	.31	....	....	....	.09	....	....	....	....	....	....	....	1.51
Sumner	Puget Sound	.14	1.08	1.38	....	....	.21	.63	.06	T.	T.	.64	.80	.47	.25	.02	T.	T.	.02	.08	.06	T.	....	.27	1.07	.52	....	....	....	.06	....	....	7.76
Sunnyside	Yakima	....	....	.09	....	....	....	.11	.02	.02	.02	T.	.12	.15	....	.06	....	.08	....	....	....	.03	....	T.	.01	....	....	....	.01	....	....	....	0.72
Tacoma	Puget Sound	.21	.69	.64	....	....	.71	.72	.02	.02	T.	1.51	T.	.23	T.	.08	.23	.02	T.	.06	.10	T.	T.	.21	1.80	.15	....	....	....	.04	....	T.	7.44
Tatoosh Island	Coast	1.03	.15	.23	....	.02	.48	.96	1.34	.07	.01	.04	.30	.72	.33	.65	.10	.08	.02	....	.63	.31	.14	2.03	1.91	.02	T.	....	.12	.02	....	.03	11.74
Tieton	Yakima	....	.10	.34	.05	....	....	.16	.19	.06	....	.23	.50	.20	.01	....	.12	.08	.29	....	.12	.10	....	....	T.	....	....	....	....	....	....	....	2.55
Touchet	Columbia	....	....	.16	T.	....	....	T.	T.	....	.03	.08	.58	.16	.02	....	....	T.	.38	T.	....	.08	T.	T.	.05	....	....	T.	....	....	....	....	1.54
Touchet Ridge	....do	....	....	.36	.20	....	....	.22	.20	....	.08	.72	.95	.36	.16	....	.07	.05	.80	.10	....	1.26	.88	....	.66	....	....	....	....	....	....	....	7.07
Trinidad	....do	.10	....	....	....	....	....	.10	....	....	....	....	.20	.20	....	.10	....	.10	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	0.90
Vancouver	Columbia	....	....	.30	....	....	....	.60	.04	.24	....	.11	.49	.46	.06	.07	.27	.53	.53	.08	.21	.97	....	.22	.18	....	....	....	....	....	....	....	5.36
Vashon Island	Puget Sound	.05	.42	.78	.03	T.	.20	.05	.10	.27	.02	.52	.76	.02	.14	.03	.20	.19	.01	.01	.14	.02	.01	.15	.50	1.14	.03	.01	T.	.04	T.	.01	5.85
Wahluke	Columbia	....	....	....	....	....	....	.32	.10	....	....	.10	.20	.15	....	.05	....	....	.35	....	....	....	....	....	....	....	.40	....	....	....	....	....	1.67
Wallace	Okanogan	....	....	.06	....	....	....	.06	....	.23	....	.03	.10	.14	.01	.20	.05	.13	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	1.06
Walla Walla	Columbia	....	....	.14	T.	....	....	.05	.12	....	.05	.02	.65	.24	T.	T.	T.	.06	.37	....	.01	.62	.09	.09	.01	....	....	....	....	....	....	....	2.52
Washougal	....do	....	....	.52	.01	....	.40	.90	.30	.20	.20	.45	.85	....	....	....	.70	....	1.20	.10	....	2.30	.20	....	.60	.10	....	....	....	.05	....	....	9.08
Waterville	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
We atchee	....do	.34	....	....	....	....	....	.25	....	T.	....	T.	.37	.12	....	.13	T.	....	.12	T.	....	T.	....	.27	T.	....	....	....	....	....	....	....	1.60
Wenatchee (near)	....do	.07	T.	.26	....	....	....	.09	.05	.10	T.	.12	.35	.21	....	.21	.10	T.	.05	.09	.06	T.	....	....	.06	T.	....	....	....	....	....	....	1.82
White Salmon	....do	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wilbur	....do	....	....	.30	....	....	....	.40	.10	....	....	.20	.18	....	....	.28	....	.12	....	....	....	....	T.	.09	....	....	....	....	....	....	....	....	1.67
Wind River	....do	....	....	....	....	....	....	.48	1.97	2.12	.25	1.74	2.38	.30	.50	.20	.70	1.47	.76	....	....	.28	....	.41	1.97	....	....	....	....	....	....	....	15.53
Winthrop	....do	T.	.29	.07	....	T.	....	.13	.05	.22	....	.09	.04	.09	.05	.20	.02	.08	T.	....	.22	....	....	T.	T.	.09	....	....	T.	....	....	....	1.64
Yacolt	....do	.12	.60	.71	....	....	.13	2.00	.24	.39	.33	.77	1.45	.75	.16	.13	.32	.86	.75	.24	.53	2.03	.15	.36	1.25	.52	....	....	....	.08	....	....	14.87
Yale	....do	....	2.30	1.14	....	....	.12	1.78	.22	.76	.24	1.41	1.65	.65	T.	.52	.36	.10	.50	.32	.85	1.30	.03	.36	1.74	1.42	....	....	....	.06	....	....	17.83
Zillah	Yakima	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Oregon.																																	
Albany	Willamette	.13	.10	.22	.10	....	....	.16	.80	....	.05	....	.28	.35	.03	.01	.22	.40	1.93	.26	.07	.10	.35	....	.10	.02	....	....	.01	....	....	....	5.69
Alpine	....do	....	T.	.34	.10	....	....	1.10	.65	.10	T.	.44	.40	.40	T.	.30	.65	.80	1.85	.20	.30	.27	.30	T.	.07	T.	....	....	....	....	....	....	8.27
Ana River	SE. drainage	....	....	....	.04	....	....	.06	T.	....	.05	....	....	.08	T.	.65	.13	.02	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.03
Ashland	Rogue	....	....	.18	.07	....	....	T.	.70	....	....	.09	....	.38	.03	.24	.16	.04	.93	....	....	T.	.43	T.	.23	....	....	....	....	....	....	....	3.48
Astoria	Columbia	.01	1.64	.98	.07	....	.09	1.23	.88	.41	.04	1.01	.84	.99	.23	.33	.25	.29	.41	.14	.75	.38	.17	.55	2.30	1.02	.01	T.	....	.14	....	T.	15.16
Austin	John Day	....	....	.08	....	....	....	.25	.40	....	....	....	....	.78	....	....	....	.23	....	....	.33	.25	.16	....	.50	....	....	....	....	....	....	....	2.98
Baker	Snake	T.	....	.01	....	....	.18	.11	T.	.01	.20	.11	.07	T.	....	.02	.18	.28	T.	.01	.23	T.	.08	.06	....	....	....	....	....	T.	....	T.	1.55
Bear Creek	Deschutes	....	....	.02	.05	....	....	.20	.15	.06	....	.03	.01	....	....	.01	.05	.02	.08	.05	....	....	.01	....	.08	....	....	....	....	....	....	....	0.82
Bear Valley	SE. drainage	....	....	....	....	.20	.60	.09	....	....	T.	.22	....	....	....	.06	T.	.08	.06	.18	.45	....	....	....	....	....	....	....	T.	....	....	....	1.94
Beech Creek	John Day	....	....	.05	.08	....	....	.12	.14	....	....	.26	.08	.35	.10	....	.10	.22	.35	....	....	.20	.10	.15	....	....	....	....	....	....	....	....	2.30
Bellfountain	Willamette	.01	.09	.45	.13	....	.01	.81	.78	.12	.03	.55	.64	.37	.15	.36	.85	1.36	.85	.27	.11	.64	.08	.08	.05	.10	.02	....	....	....	....	....	8.91
Bend	Deschutes	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Big Basin	John Day	.20	....	T.	T.	....	....	.10	....	T.	....	.10	....	.50	T.	T.	T.	T.	T.	T.	T.	T.	.10	....	....	....	....	....	....	....	....	1.00
Black Butte	Willamette	....	....	....	....	....	....	.50	1.10	.20	.25	.30	.10	.65	.60	.30	1.40	1.55	1.45	.20	.40	.20	.15	....	....	....	....	....	....	....	....	9.35
Blalock	Columbia	....	....	.07	T.	....	.20	.17	....	.17	T.	.34	T.	T.	T.	T.	....	.60	....	.10	....	.60	....	.32	....	....	....	T.	....	....	....	....	2.57
Blue Mt'nSawmill	Umatilla	....	....	....	....	.83	....	1.00	1.00	....	.25	1.25	.25	....	.30	....	....	.40	.50	.50	....	.20	....	1.00	.30	....	....	....	....	....	....	....	7.78
Brogan	Malheur	....	....	....	....	....	....	....	.60	.30	....	.20	....	....	....	....	.20	.10	....	....	....	.20	....	....	.30	....	....	....	....	....	....	....	1.90

TABLE 2.—*Daily precipitation for January, 1913. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon—Continued.																																	
Buena Vista	Snake	.10						.20	.62			.30					.30	.40	.11		.01		.30	.40	.10								2.84
Burns	SE. drainage							.45			T.	.18	.22	.25	T.	T.				T.		.34		.11								1.55
Burns Mill	do											.50	.40	.60	T.	T.	.10				.05		.40	.10								2.15
Butte Falls	Rogue	.01		.08	.08			.26	1.08	.02	T.	23	.32	.80	.07	.14	.25	.36	.53	.07	T.	.10	.22		.20							4.82
California Gulch	Umatilla							.64					.70					.45				.58										2.37
Cascade Locks	Columbia	T.	.68	.65	T.			.89	1.05	.12	.10	1.12	1.40	.61	.05	.07	.39	.12	2.78	.42	.20	2.54	.11	.12	.92	.39							14.73
Cascadia	Willamette		.36	.38	.22			.77	.97	.05	.07	.29	.10	.50	.05	.08	.22	.75	1.68	.28	.02	.60	.52	.07		.37							8.35
Cazadero	do		.09	.87	.04			.62	.95	.05	.02	.40	.74	.44	.05	.02	.27	.24	.51	.35		.84	.21	.27	.42	.08				.04			7.52
Christmas Lake	SE. drainage			T.	.05			.07	T.	.09	T.			.13	.20	.05	.05	T.	.12	T.		T.	.04		T.								0.80
Clear Lake	Willamette	.48	.15	.70	.66			.58	1.74	.10	.03	.17	.88	.88	.79	.25	.08	1.00	2.00	.37	.10	.45	.48	T.	.40	.12	T.						12.41
Cliff	SE. drainage			T.	T.			.08		.08				.10	.15		.02	.02	.11					.08	.03								0.67
Columbia Mine	Snake			.20	.10				1.00	T.	.10	1.20	.70	1.00	.40		.70	.80	1.20	.30	T.	.70	.50	T.	.70						.10	9.70
Condon	John Day																																
Coquille River Lt. H	Coast			.35				1.67	.22	.64		.80	.10	1.30	.70	.51	1.05	.93	.20	.07		.63		.40	.68								10.25
Cornucopia	Snake	.07	.25	.29	.04			.38	.52	.04	.07	.76	1.21	.72	.51	.03	.55	.58	.74	.06	.26	1.04	.35	.02	.62								9.11
Corvallis	Willamette		.02	.20				.75	.50	.05	.25	.50		.04	.01	.02	.55	*	2.25	.42	.08	.60	.03	.07		.02							6.36
Cracker Creek	Snake	.20	T.	T.	T.			.20	.30	T.	T.	.50	.50	.70	T.	T.	T.	.40	.50	T.	T.	.30	T.	T.	.50					T.			4.10
Crescent	Deschutes	.06	.01	.09	.08	T.		.14	.36	.03	T.	.08	.18	.28	.09	.14	.11	.54	.86	.08	T.	T.	.08	T.	.21	T.							3.42
Dayville	John Day	T.		T.	T.				.10			T.		.40	.07	T.	.05	.15	.35	.10		T.	.12	T.	.02								1.36
Deadwood	Coast	T.	.40	.57	.31			1.53	1.35	.41	.29	.96	1.59	.80	.39	.57	1.21	1.65	2.06	.34	.26	3.08	.35	T.	.34	.06							18.52
Diamond	SE. drainage	T.						T.	.10		.20	.05			T.	T.	T.	T.	T.	T.			.20										0.55
Doraville	Columbia	.02	.23	.57	.01		.02	.51	.26	.21	T.	.26	.65	.27	.15	.12	.32	.37	.60	.26	.14	1.03	.04	.22	.80	.23	.01			.01			7.31
Drain	Umpqua	.04		.35	.04			.52	1.02	.16	T.	.44	.51	.59	.36	.19	.78	1.20	1.36	.17	.02	.37	.35	T.	.04	T.							8.31
Dufur	Columbia			.02				.22	.03	.02		.26	.10	.23		.07	.03	.36	.87	.13		.18										2.52
Duncan	Umatilla			.60	.20				.30	.40		.70							.10	.40	.80	.20	.30	.90		.06							4.96
Echo	do			.07				.15			T.		.55	.10	T.					.80	.05			.12		.28							2.12
Ella	Columbia			T.				.08	.27					.30		.10			.70	.12			.10		.10				T.			1.77
Embody	SE. drainage				.05			.03	.41			.19	.52	1.18	.19	.27	.21	.68	.45	.09		T.		T.								4.27
Eugene	Willamette	.08	.03	.21	.12			.47			.15	.31	.33	.08	.17	T.	.22	.42	1.02	.98	.05	.08	.24		.05	.03							5.04
Fairview	Coast																																
Falls City	Willamette																																
Fir Glen	Coast	.02	.04	.45	.33			.50	1.40	.15	.01	.25	.52	.83	.50	.57	.93	1.15	2.30	.18		.37	.18	.04	.10								10.82
Florence	do		.31	.29	.22			.82	.62	.87	.17	.62	.52	.81	.31	.56	.84	1.62	.82	.28	.36	2.20	.17	.20	.09	.33							13.03
Forest Grove	Willamette																																
Fort Rock	SE. drainage			T.	.03			T.	.10	.03		.03		.35	.05	.05	.03	.50														1.17
Galice	Rogue	.01		.10	.16			.47	1.06	.12	.03	.83	.31	1.99	.23	.98	1.33	1.93	1.07	T.		.24	.35		.10								11.31
Gardiner	Umpqua			.50	.26		.02	.82	.92	1.04	.24	.75	.42	.90	.26	.48	.98	1.55	.66	.44	.21	1.71	.30	.15	.06	.14							12.81
Gibbon	Umatilla																																
Glencoe	Columbia								.42						.46										.20								1.08
Glendale	Umpqua			T.				2.10	.40	.21	.32	.21	.61	.27	.08	.22	.31	1.60	T.			.18	T.	.16									6.67
Glenora	Coast	1.44	2.00	1.90			.02	.35	.18		.10	.20	2.00	1.50	.50	.60	.35	1.00	.20	.70	1.00	.20		.50	3.00	.50							18.24
Gold Beach	Rogue			.20	.10			.40	1.20	.60	.20	.40	.40	1.60	1.30	.80	.70	1.00	1.20	.20	.15	.80			.10								11.35
Golden Falls	Coast	.01	.14	.80	.19			.98	1.86	.56	.05	.49	1.79	.93	.84	.57	1.42	2.10	1.75	.26	.11	1.20	.61	.06	.12	.13							16.97
Grants Pass	Rogue	T.		.09	.05			.31	1.17		.03	.35	.39	1.65	.29	.40	.46	1.25	1.05			.02	.36		.06								7.93
Grass Valley	John Day							.10						.20		.33		.40	.53	.30													1.86
Greenhorn	Snake	.14	.04	.25	.09	.01		.35	.38	.01	.02	.49	1.00	1.11	.34	.04	.47	.45	.82	.28	T.	.50	.54	.01	.47						.02		7.85
Gumboot	do			.23	.12	T.		.02	.54	T.	T.	.13	.70	1.00	.39	.62	.36	.53	.79	.02	.10	.05	.03									5.63
Gurdane	Columbia								.04			T.							.04	.04			.02										0.14
Happy Home	Umpqua			.74	.20			1.38	2.92	.08	.02	.96	1.45	2.14	1.40	2.60	2.04	4.30	3.84	.44		.30	.04	.02	.80								25.67
Harbor	Columbia		.02	.08				1.00	1.63	.74	.03	.08	1.20	1.70	1.00	.44	1.78	1.00	.01			1.00	.31		.01		T.						12.03
Hay Creek	Deschutes			.10	.02			.05	.31	.03				.17	.08	.22		.02	.33	.16			.12										1.61
Hazeldell	Willamette	.05	.03	.37			.22	.89				.45	.49	.44	.17	.12	.21	2.47		T.	.12	.24		.18	T.	.03							6.48
Headworks	do				.22	.30	.20		.36		.62	.51	.36	1.03	.73	.12	.08	.53	.23	.08	.54		1.14	.53	.38	.48							8.44
Heppner	Columbia	.01		.08				.04	.24				.11	.13	.10	.05			.20	.07		.08		.20									1.31
Hermiston	Umatilla			.08				.18	T.	T.	T.	T.	.28	.11	T.	.03	.02			T.	T.	T.	T.		.13								0.83
Hilgard	G. Ronde			.10				.40				.20	.10			T.	.40	T.	T.			.15		.05	.10								1.50
Hood River	Columbia	.03	.09	.50				.50					.60	.50			.10	.20	1.20	.60					.03								4.35
No. 2	do	.02	.08	.51				.90	.37	.05	.08	.84	.78	.22	.05	.08	.14	.50	.75	.18		.58			.43	.02							6.58
No. 3	do	.04		.45	T.			.70	.54	.05	.05	.64	.54	.17	.04	T.	.15	.23	1.15	.32	T.	.71			.18								5.96
No. 4	do			.57				.88	.54	.05	.14	.83	.41	.19	T.	T.	.33	.30	1.03	.33		.83			.16								6.59
No. 5	do																																
Hoover	Willamette	.25	.10	.85		.28		1.12	.90	.04	.08	1.01	1.00	.86	.44	.22	.30	1.40	2.30	.66	.12	1.16	.28	.11	.39	.21							14.08
Howardville	Gnd. Ronde		.08	.38	.03			.38	.20		.08	.80	.56	.22	.16		.11	.53	.22	.30	.21	.63	.17	.11	.30					.05			5.52
Huntington	Snake					.05	.05					.07				.01			.04			.50	.40	.60	T.								1.72
Ibex mine	John Day	.20	.10	.18	.20			.40	.37	.05	.08	.42	.55	.72	.18	.08	.48	.58	.53	.25	.05	.30	.25	T.	.80					.02		.05	6.84
Imperial	Deschutes			T.	.25			.08	.03	.05	T.	T.		.12	.01	.25	.03	.20	.90	.06	.01			T.	.06								2.05
Ironside	Snake	.04			.20	.04	.02	.10	.06	.20	.22	.05			.25	.35									.30								1.83
Jacksonville	Rogue			.12	.02			.13	.91			.13	.35	.85	.06	.22	.32	.35	1.26			.03	.35		.15								5.25
Joseph	Gnd. Ronde								.10						.40						.20		.10	.20									1.00
Klamath Agency	Klamath							.40	.40			.90	.30	.40		.30		.80					.30										3.80
Klamath Falls	do			T.				.03	.32	.06	.05	.23	.16	.44	.31	.15	.33	.12	.83	.05		.13	.33		.03								3.57
La Grande	Gnd. Ronde	.04	.01	.30	.12			.32	.15		.01	.26	.27	.04				.05	.18	.13	T.	.36	.13		.49					.05		.02	2.93
Lakeview	Pitt			T.	T.			T.	.15	.05		.15			.19		.15	T.	.20			T.	.15									1.04
Lilyglen	Rogue			.40	.09			.09	.91	.08		.24	.16	.85	.12	.55	.18	.24	.93	.02		.16	.35		.28								5.65
Long Creek	John Day			.24	.20			.06			.10		.19	.12	.02			.28	.12			.12			.26								1.71
McKenzie Bridge	Willamette	.06	.41	.70	.02			.30	1.90	.13	.10	.50	.77	1.62	.48	.38	.14	.96	1.26	.60	.40	.98	.49	.06	.63	.14	.01						13.04
McMinnville	do	.02	.22	.39	T.	T.	T.	.80	.35	.05	.03	.14	.65	.42	.05	.34	.25	1.01	.50	.50	.13	1.33	.02	.13	.11								7.44
Marshfield	Coast	.02		.41	.16			.48	1.21	.72	.10	.30	.93	.93	.64	.50	1.03	1.71	1.31	.43	.03	.76	.72	.10	.10		.01						12.60
Maury	Deschutes																																
Meadow Bk. Ranch	Columbia	.02	.80					.81				1.40	2.00	.60								.07			.27	.03							6.00
Medford	Rogue			.06	.07			.07	.46				.05	1.00	.10	.11	.14	.09	.79			.02	.32	.15		T.	T.	.02	.02	.02	.01	.02	3.52
Merrill	Int. drain'ge			T.	T.							.03		.20	.39	.06	.20		T.				.47										1.35
Metolius	Deschutes							.79																									0.79
Miramonte Farm	Willamette	.01	.05	.46	.09			.74	.50	.02		.14	.38	.42	.03	.17	.52	.88	1.35	.20	.05	.82	.03	.15	.09	.05							7.15
Mountain Home	Columbia	T.	.55	.31	.10			.96	.61	.13		.46	.86	.43	.41	.10	.47	.59	.64	.34	.53	1.06	.09	.46	1.18	.42				.04			10.74
Mount Angel	Willamette		.09	.28				.57	.40	.21	.02	.15	.05	.32		.14	.27	1.20	1.00	.40		.55		.16	.13	.09				.04			6.07
Mountain Ranch	Rogue							.81	1.00	.64	T.	.50		1.58	.40	.38	.60	T.	1.56		.46											7.93
Mount Hood	Columbia																																
Musick	Umpqua	.98		.20	.27			1.53	.98	.29	.56	.38	1.93	1.56	1.45	.76	2.32	1.29	1.18	.73	.55	.67	.29	.28	.12								18.32
Newport	Coast		.17	.44	.25			1.20	.40	.70	.26	.98	.20	1.04	.39	.47	.78	1.48	.41		.43	2.23	.05	.08	.50	.43							12.89
Ochoco	Deschutes					T.		.02	.04	T.	T.	.08		.02	.01	.01	.03	.05	.19	.14			.14		.13								0.86
Ochoco Creek	do			.07	T.			.30	.54	.05		T.		.05	T.	T.	T.	.04	.09	.06			.13	.03	.04								1.40
Odell	Columbia																																
Ortley	do	.02		.38				.52	.18		.02	.51	.69	.28				.28	1.09	.23		.59			.18	T.							4.97
Owyhee	Owyhee							.09						.11				.05			.09				.25	.30	.20						1.09
Paisley	SE. drainage				.05									.39					.45														0.89
Parkdale	Columbia	.03	.38	.15				1.50	.11		.10	1.05	.55	.21	T.	T.	.20	2.00	.20	.34	.20	.76		.22	T.								8.00
Pendleton	Umatilla			.18				.23	.17		.03	.22	.47	.14	.16	T.			.39	.25			.10	.01	.28								2.63
Persist	Rogue		.18	.20	.10		.93	1.57		.15		.44	1.36	.78	.15	.37	.62	.80	1.57	.15	.13	.24	.15		.45								10.34
Pilot Rock	Umatilla			.25				.09	.30		T.	T.	.10	.22	.05			.35	.20	.07		.03	.33										1.99
Pompeii	Columbia		.65	.40			.13	1.55	1.20	.15	.45	1.52	2.00	.60	.20	.27	.90	2.10	.90	.95	.80	2.10		.40	1.14					.36			18.77
Portland	Willamette	.01	.06	.28			.06	.67	.01	.15		.25	.92	.39	.06	.33	.36	.74	.04	.08	.13	1.20	T.	.50	T.	.01							6.25

TABLE 2.—*Daily precipitation for January, 1913. District No. 12*—Continued.

Stations.	Watershed.	Day of month.																													Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Oregon—Continued.																																	
Post	Deschutes	T.		.09	.01			.05	.11	.03	.02	T.		.13	T.	.01	.03	.05	.44	.15			.03		.08								1.23
Power House	Columbia																																
Prairie City	John Day	.02	T.	.04	.07			.20	.02		T.	.16	.06	.09	.03		T.	.09	.04	.11		.07	.08		.41					.02			1.51
Prineville	Deschutes																																
Prospect	Rogue	.05		.33	.04			*	1.83			.35	.52	1.40	.15	.32	.20	.45	1.36	.15		.25	.28		.44	.03							8.15
Rager Creek	Deschutes			.09	.06			.36	.31	.03	.22			.07			.04	.21	.07	.19			.10	T.	.09								1.84
Ramsey	Columbia			.20				.21	.09	.06		.15	.13	.20		.09	T.	.23	.76	.22		.17											2.51
Range	John Day			.10	.10			.15	.15			.20	.20		.10	.10	.10	T.	.20	.25					.70								2.35
Ray Creek	Columbia																																
Redmond	Deschutes			.17				.03	.15										.30	.02			.02										0.69
Reston	Umpqua			.43	.13			.44	1.28	.13		.50	.56	.71	.46	.56	.93	1.54	1.80	.16		.50	.17	.02	.11								10.43
Richland	Snake							.20	.40					T.				.40					.10		.25								1.35
Rio Hermoso	Deschutes			.60	.05			.50				.30	.40	.35			.15	.60	.90	.20													4.05
Riverdale	do																																
Riverside	Malheur							.20	.30			.20		.25	.10				.20							.15							1.40
Rock Creek	Willamette			.83	.09		.10	1.71	1.02	.33	.09	.87	1.37	.55	.23	.43	.67	1.58	2.18		.31	2.14	.31		.16	.10							15.07
Roseburg	Umpqua			.10	.01			.74	.18	.13		.37	.14	.59	.14	.24	.35	1.55	.80	T.		.31	.01	.09	.01		T.						5.76
Rosland	Deschutes			.12	.25			.36	.93	.11	.10	.25		.74	.15	.24	.21	.87	.74	.25		T.	.13	T.	.14								5.59
Salem	Willamette		T.	.16				.34	.28	.02	.02	.16	.08	.24	.02	.03	.32	.29	1.67	.18	T.	.36	.09	.05	.05								4.36
Seneca	SE. drainage	.18						.21	.03	.01	.02	.09		.21			.20	.15	.16	.20		.10	.02									T.	1.58
Silver Lake	do				.05			.10	.05					.40	.14		.14	.06	.38			.05											1.37
Siskiyou	Rogue	.20		.12	.26			.25	2.23	.11		.42	.56	1.75	.32	.68	.37	1.21	.75	.10		.14	.75		.04								10.26
Sisters	Deschutes			.05				.56	.40				.05	.04	.07	.08		.30	.70	.30			.09										2.64
Sparta	Snake	.30	.10	.20				.60	.10		.20	.80	.60				.30	.40	.30	.60	.40	1.20											6.10
Stafford	Willamette	.01	.02	.41	.02			.54	.39	.04	.09	.33	.84	.39	.08	.03	.63	.30	.60	.10	.06	.68	.05	.12	.09	.12				.02			5.96
Starkey	Gra'e Ronde	T.	T.	.18	.12	.03		.21	.16		.01	.16	.10	.06	.02		.05	.04	.10	.05		.28	.10	.12	.50								2.29
Summit	Willamette	.01	.39	.46	.30		T.	1.45	.58	.10	.13	.50	.63	.47	.20	.38	.48	1.62	.61	.38	.26	1.62	.06	.15	.10	.31							11.19
Summit Prairie	Deschutes																																
Susanville	John Day			.25	.05		.16	.30	.05		.10	.30	.31	.15			.13	.35	.20	.05	.10	.23		.50						.01			3.24
Tamarack	do			.10				.18	.44	T.	.05	.05	.02	.05	.22	.15	.01	.09	.23	.15		.27	T.	.10									2.11
Telocaset	Snake			.10				.20			.02	.20	.10				.20	.15	.05		.20	.22	.03	.20						.02			1.69
The Dalles	Columbia																																
Tinroof	Umatilla																																
Toledo	Coast	.50	.40	1.10	.02			1.40	.90		.20	.80	.85		.80	1.00	.01	1.70	1.20	.10	.80	1.20			.50	.20							13.68
Trail	Rogue			.09	.05			.30	1.18	.04	T.	.30	.82	1.17	.16	.30	.23	.80	1.05	.04		.17	.20		.29	.01	T.	T.					7.20
Umatilla	Columbia			.05					.21	T.	.04		.20	.01	T.	.17		.41			.01	.09		.21								1.40
Union	Gr'de Ronde			.07				.07	.07		T.	.03	.04	.17	.02		.01	.02	.04	.02	.01	.08	.04		.19								0.88
Vale	Malheur									.15			.08	.22			.08	.06						.23		.15							0.97
Valley Falls	SE. drainage					.03						.17	.18		T.	T.		.03	.05		.08		.03										0.57
Van	Malheur							.10	.50			.20					.72								.20								1.72
Vida	Willamette		.33	.64	.09			.95	1.04	.09	.10	.38	.61	.73	.57	.20	.27	1.08	1.46	.41	.13	.78	.37	.25	.20	T.							10.68
Vistillas	Pitt	.43							.48	.01		.28	.10	.02	.42	.28	.14	.48	.22			.10	.15										3.11
Waldo	Rogue																																
Wallace Orchard	Willamette			.22				.68	.29	.05	.05	.21	.21	.21	.03	.17	.35	.39	*	.23		.62	.05	.12	.07								3.95
Walloupa	Gr'de Ronde	.10		.23	.09			.25	.11		.05	.29	1.02	.25	.20		T.	.42	.95	.13	.06	.42	.11		.24	T.							4.92
Wallowa	do	.02		.09	.06			.18	.12		.03	.18	.20	.21	.24			.24	.10	.06	T.	.16	.07	T.	.19								2.15
Wamic	Deschutes							.11				T.	T.	.14			.25	.13	1.00	.09	T.												1.72
Warmspring	do																																
Wasco	Columbia			.20			.15	.16				.40	.14					.72		.10					.15								2.02
Welches	do		.54	.05	.40	.60		2.10	1.00	1.15	1.00	1.00	1.00				1.60			.35		2.00		1.79		1.00	1.05			.05			16.68
Weston	Walla Walla	T.	T.	.10	T.			.40		.10	.05	.20	.40					.60	.40	.50						.62							3.37
Williams	Rogue			T.				.35	1.17	.03	.03		.50	1.80	.22	.45	.20	.35	1.10			.55		.10									6.85
Yonna	Int. drainage																																

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 12, Columbia Valley.*

Date.	Montana.				Afton, Wyo.		Idaho.																			
	Kalispell.		Missoula.				Boise.		Bonners Ferry.		Hotspring.		Lewiston.		Mackay.		New Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	30	20	28	21	48	8	33	27	41	10	42	26	40	31	14	6	.....	.....	29	17	36	18	30	17	37	5	24	13
2....	36	19	43	20	22	4	39	29	38	19	45	24	54	40	21	12	.....	.....	30	22	34	17	39	18	22	9	40	20
3....	36	12	40	26	38	12	45	27	42	34	52	26	57	29	30	8	.....	.....	47	23	45	22	38	20	35	20	36	25
4....	19	− 3	18	11	37	− 7	27	15	32	− 5	50	19	30	14	30	8	.....	.....	23	2	29	10	24	8	34	− 6	20	8
5....	6	−10	8	− 7	15	−23	19	7	20	− 5	25	8	18	4	8	−10	.....	−31	8	5	14	−10	18	−10	9	− 7	5	− 5
6....	4	−12	0	−14	0	−28	17	2	21	− 6	14	− 2	20	2	− 3	−20	.....	−38	8	−13	1	−14	12	−17	1	−29	14	− 8
7....	15	4	13	0	10	−29	32	8	34	2	20	6	32	20	0	−12	.....	.....	13	− 5	15	− 1	15	−10	9	−19	34	5
8....	34	13	31	13	35	− 5	38	21	38	5	20	16	39	21	11	− 3	.....	.....	30	13	24	10	21	11	20	2	32	20
9....	21	7	16	− 2	36	24	25	18	42	5	30	12	27	16	16	3	.....	.....	34	21	20	10	26	17	26	17	26	7
10....	15	5	20	9	35	9	25	18	43	− 6	22	10	27	21	16	− 3	.....	.....	21	16	18	0	19	12	25	9	23	5
11....	12	7	30	14	26	6	29	22	23	6	35	10	40	25	10	−10	.....	.....	23	16	25	2	27	9	15	8	27	20
12....	8	− 8	34	10	26	12	39	28	19	5	45	28	41	20	28	5	.....	.....	38	23	38	18	33	17	28	15	46	14
13....	11	−10	16	0	35	17	50	39	19	− 2	50	35	29	23	28	4	.....	.....	43	33	40	13	36	18	35	20	28	3
14....	23	11	33	16	37	20	48	40	23	− 5	52	34	34	25	27	18	.....	.....	44	35	45	36	40	31	36	20	33	17
15....	28	23	35	18	38	19	46	33	32	2	50	32	38	28	27	23	.....	.....	43	36	40	18	38	25	45	23	39	24
16....	28	19	35	22	42	17	38	28	39	16	45	22	34	21	25	10	.....	.....	37	26	37	17	35	15	35	20	34	23
17....	32	22	28	16	30	12	43	25	31	8	42	22	37	18	18	9	.....	.....	30	20	31	10	32	24	25	12	30	25
18....	30	17	38	20	32	15	46	25	32	7	55	30	38	25	25	12	37	13	41	20	40	24	36	23	37	20	28	22
19....	22	7	24	10	30	− 9	27	18	40	20	35	20	30	5	25	− 8	20	− 1	22	4	26	5	24	8	35	2	12	3
20....	23	− 1	25	−10	16	−22	33	17	44	14	35	15	39	5	10	−12	15	−20	22	0	12	−11	20	2	11	−18	27	2
21....	23	8	30	21	30	− 3	35	26	34	12	37	25	37	31	10	1	25	11	33	22	26	9	29	14	21	6	32	24
22....	27	8	38	22	31	17	36	15	30	11	40	28	36	11	24	4	20	− 5	30	22	32	9	30	19	28	9	27	18
23....	28	9	25	10	25	2	29	11	30	15	35	16	35	9	24	− 1	10	−19	28	10	28	− 1	27	0	24	− 6	30	13
24....	32	24	33	19	20	0	33	24	38	19	42	27	45	34	15	3	35	14	29	22	25	15	32	13	23	11	40	27
25....	43	29	43	31	38	16	45	28	43	30	38	18	53	31	40	5	30	− 8	46	29	48	15	40	22	28	23	42	33
26....	39	20	40	18	35	0	38	22	40	12	38	14	40	20	35	10	23	−10	38	14	40	9	37	10	28	0	33	21
27....	36	19	36	11	19	− 9	33	18	48	19	36	12	36	16	20	3	25	− 8	32	10	24	0	34	6	30	−13	32	20
28....	32	9	30	2	22	−10	28	12	41	13	38	14	38	16	18	3	30	−11	35	10	24	− 3	36	7	30	− 2	35	15
29....	45	14	43	11	23	−15	27	18	41	14	40	14	40	23	35	0	29	−10	37	7	22	− 2	23	2	21	− 2	35	20
30....	30	13	34	12	28	8	35	17	43	4	41	18	44	31	35	11	35	− 5	28	17	28	2	25	14	23	14	32	14
31....	38	25	40	28	25	16	38	22	34	22	42	22	40	30	34	20	40	22	37	21	39	20	36	15	22	14	38	24
Mns..	26.0	10.3	29.3	12.2	28.5	2.3	34.7	21.3	34.7	9.5	38.4	19.4	37.0	20.8	21.2	3.2	.....	.....	30.9	15.7	29.2	8.6	29.4	11.5	25.7	6.0	30.1	15.1

Date.	Washington.																									
	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Head.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Sixprong.		Spokane.		Tacoma.		Tatoosh Island.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	40	28	36	30	29	18	37	32	32	20	48	38	36	26	34	20	39	31	40	33	56	38	33	23	40	31	49	33
2....	49	33	45	32	32	22	37	33	50	23	50	45	60	23	48	29	46	37	48	38	54	36	47	32	48	40	48	37
3....	42	31	40	36	35	22	45	33	47	28	49	35	46	29	41	31	39	31	40	31	52	34	43	28	41	30	41	34
4....	38	24	36	26	35	10	34	24	34	20	41	30	30	20	32	16	35	23	3ɔ	25	34	26	28	16	34	26	37	31
5....	34	19	29	17	31	− 6	30	15	27	9	35	28	24	7	20	11	33	22	31	22	32	16	18	9	31	18	38	30
6....	31	24	29	26	15	1	28	13	21	10	39	30	24	8	21	9	35	27	31	25	30	10	18	10	30	22	38	31
7....	46	26	42	28	17	12	28	15	24	15	50	36	26	19	29	15	42	33	43	31	33	21	30	16	46	30	47	38
8....	38	31	38	33	22	12	36	27	24	17	43	39	27	12	31	15	40	31	40	35	32	22	34	21	41	34	43	34
9....	37	32	35	32	32	10	44	30	29	20	42	37	32	17	30	13	36	31	40	34	30	24	30	17	39	35	40	35
10....	37	30	32	24	31	11	35	29	25	18	42	37	30	13	25	14	35	31	38	33	32	22	25	16	38	33	40	36
11....	36	32	26	22	31	10	35	33	20	13	47	35	27	10	26	9	36	29	38	32	33	20	28	20	37	32	40	34
12....	36	29	27	19	29	8	38	32	19	10	43	37	30	24	27	− 6	30	26	34	27	28	16	23	5	33	28	34	29
13....	40	29	40	19	20	− 2	37	33	19	9	45	37	24	18	20	−12	36	27	40	33	20	16	21	10	42	32	44	29
14....	42	31	40	34	25	15	40	32	20	13	43	37	26	17	23	11	39	30	44	35	26	12	32	20	44	32	41	35
15....	42	30	37	31	30	22	43	29	26	14	43	36	31	17	34	11	37	31	44	35	30	16	39	26	45	31	41	34
16....	40	29	33	28	38	26	38	32	28	22	41	35	27	19	29	13	37	27	41	33	34	10	35	23	39	32	41	34
17....	38	29	38	25	37	24	35	30	27	13	41	33	25	16	29	15	38	25	38	32	36	18	32	22	38	32	39	32
18....	35	23	31	15	28	10	34	28	28	13	39	33	36	20	29	5	35	24	37	30	32	23	27	14	35	28	35	30
19....	35	21	33	9	20	− 10	37	26	19	5	40	34	28	9	5	−19	30	25	36	26	30	15	20	2	37	27	35	28
20....	42	24	39	20	19	− 7	35	24	14	4	44	35	30	8	28	−14	42	26	38	27	36	10	31	2	38	26	44	34
21....	42	24	37	28	23	11	33	31	21	9	41	34	38	17	32	10	38	29	40	35	40	32	28	21	39	32	41	35
22....	39	27	37	28	27	18	37	30	20	14	39	33	34	10	28	1	40	26	39	33	38	20	26	19	40	31	39	36
23....	36	31	38	34	28	17	33	31	35	19	46	35	34	14	29	15	38	32	39	34	36	16	30	20	39	35	45	36
24....	48	34	44	32	33	22	35	32	35	22	48	46	42	20	40	28	47	35	48	39	46	31	40	30	48	39	47	45
25....	48	42	52	40	46	29	34	25	50	25	48	43	56	29	44	27	48	34	49	44	48	36	43	30	50	45	46	42
26....	48	36	49	36	31	12	47	31	43	26	48	40	45	24	37	19	44	31	44	35	48	30	35	20	45	34	46	41
27....	50	32	46	33	36	22	43	23	31	20	48	36	40	16	33	13	45	31	44	33	36	30	29	19	40	33	47	41
28....	45	31	38	28	31	18	44	24	29	24	43	38	32	21	26	10	44	30	39	32	32	26	26	16	38	34	45	39
29....	44	39	47	36	22	14	41	29	35	23	44	41	38	22	26	20	45	37	45	38	42	26	29	18	45	37	45	41
30....	50	35	44	36	27	8	44	32	28	19	44	37	34	24	28	15	45	31	44	37	34	26	27	20	44	37	45	40
31....	51	34	42	37	30	14	49	33	35	17	43	39	40	26	29	22	43	33	44	38	40	27	31	23	43	36	45	40
Mns..	41.3	29.7	38.1	28.2	28.7	12.7	37.6	28.1	28.9	16.6	43.8	36.4	33.9	17.9	29.4	11.8	39.3	29.5	40.4	32.7	36.5	22.7	30.3	18.3	40.2	32.0	42.1	35.3

TABLE 3.—*Maximum and minimum temperatures for January, 1913. District No. 12*—Continued.

Date.	Walla Walla, Wash.		Oregon.																					
			Ashland.		Baker.		Eugene.		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.		Vale.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	48	28	39	30	29	16	52	34	49	34	41	22	48	32	47	32	.....	.....	45	33	.....	.....	.....	.....
2	60	42	45	37	33	19	50	40	54	42	60	32	55	44	54	46	.....	.....	53	40	.....	.....	.....	.....
3	56	29	38	29	40	18	48	36	49	40	58	35	52	40	52	33	.....	.....	48	34	.....	.....	.....	.....
4	29	18	32	24	19	10	47	34	43	32	58	26	42	31	36	30	.....	.....	37	26	.....	.....	.....	.....
5	24	12	25	14	12	− 5	40	32	41	27	30	8	38	20	31	22	.....	.....	31	18	.....	.....	.....	.....
6	32	15	28	12	11	−10	38	19	44	35	32	2	38	20	32	22	.....	.....	34	17	.....	.....	.....	.....
7	45	31	40	23	18	2	35	20	48	30	40	25	49	32	46	30	.....	.....	47	30	.....	.....	.....	.....
8	40	31	39	23	25	13	40	30	47	34	48	27	49	33	44	36	.....	.....	43	33	.....	.....	.....	.....
9	35	19	38	25	21	8	44	30	46	33	42	24	45	32	44	36	.....	.....	42	33	.....	.....	29	10
10	35	24	39	22	22	2	50	34	45	32	36	26	42	31	43	36	.....	.....	44	31	.....	.....	28	− 8
11	42	29	37	20	25	12	51	33	45	34	42	29	47	34	44	37	.....	.....	45	31	.....	.....	27	8
12	30	13	43	31	44	25	48	34	53	43	28	21	51	44	44	32	.....	.....	51	40	.....	.....	45	26
13	25	13	42	32	43	30	47	35	51	40	24	17	50	38	42	28	.....	.....	45	38	.....	.....	43	34
14	25	18	42	30	41	30	54	37	49	40	27	10	50	37	40	33	.....	.....	46	37	.....	.....	46	36
15	42	18	41	32	38	33	44	32	47	37	30	21	46	36	48	33	.....	.....	44	34	.....	.....	48	29
16	42	19	37	28	33	20	46	33	46	35	27	1	41	32	42	34	.....	.....	39	31	.....	.....	45	25
17	42	31	45	26	34	16	45	32	51	34	40	2	50	32	38	32	.....	.....	44	31	.....	.....	34	21
18	33	25	45	28	43	19	48	33	50	36	35	23	50	34	38	30	.....	.....	43	31	.....	.....	46	26
19	30	14	48	24	23	2	45	29	47	32	28	14	41	32	37	31	.....	.....	40	29	.....	.....	33	15
20	42	19	34	22	23	2	42	31	47	32	37	10	44	30	40	32	.....	.....	42	30	.....	.....	30	12
21	40	31	38	26	26	20	48	34	45	39	43	28	45	40	40	34	.....	.....	47	38	.....	.....	32	14
22	37	29	37	26	29	8	50	33	46	32	42	25	46	30	38	31	.....	.....	42	30	.....	.....	36	15
23	40	27	39	19	24	4	55	38	48	32	38	11	43	30	45	31	.....	.....	46	28	.....	.....	28	11
24	51	40	41	31	30	19	54	35	52	41	45	22	52	40	54	45	.....	.....	58	39	.....	.....	35	22
25	55	42	41	31	44	19	48	33	54	43	56	36	51	45	52	44	.....	.....	53	36	.....	.....	31	21
26	47	31	36	29	31	13	50	35	53	41	48	25	58	31	44	34	.....	.....	42	37	.....	.....	35	5
27	31	28	35	25	30	2	47	32	51	36	44	25	57	29	44	34	.....	.....	42	38	.....	.....	34	0
28	29	27	37	22	32	5	51	33	52	36	32	27	52	30	40	32	.....	.....	47	35	.....	.....	25	− 4
29	43	27	38	22	29	8	53	36	53	37	40	28	51	30	41	34	.....	.....	47	35	.....	.....	28	0
30	31	27	40	23	37	10	55	40	58	40	33	24	56	30	44	37	.....	.....	41	35	.....	.....	31	3
31	37	27	39	23	43	20	52	34	56	44	42	30	58	30	42	37	.....	.....	40	36	.....	.....	44	6
Means	38.6	25.3	38.6	25.4	30.1	12.6	47.6	32.9	49.0	36.2	39.5	21.2	48.3	33.2	42.8	33.5	.....	.....	44.1	32.7	.....	.....	34.1[b]	14.2[b]

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WEATHER, FORECASTS AND WARNINGS.

By H. C. FRANKENFIELD, Professor of Meteorology.

NORTHERN HEMISPHERE PRESSURE.

As a rule moderately low pressure prevailed over Asia during the greater portion of the month without any unusual features. The single instance of decided recovery toward high pressure occurred during the third decade of the month, when an extensive high area from northern and central Russia overspread Siberia and China. Temperatures were in keeping with the pressure, and no unusual extremes occurred, the average thermometer readings for the month from reporting stations at the time of observation ranging approximately from zero to about −40° F. Over the Pacific Ocean pressure was high during the first half of the month, abnormally so over the north Pacific, and correspondingly low during the second half. There were two great crests at Dutch Harbor, one of 30.48 inches on the 7th, and one of 30.62 inches on the 13th, and one great depression of 28.54 inches on the 29th. Pressure over Alaska corresponded in a general way with that over the Aleutians, except that at the time of the great depression over Dutch Harbor on the 29th, the pressure was moderately high over Alaska. Temperatures over Alaska were lowest during the second half of the month (lowest reported, −48°) notwithstanding the prevailing low pressure, and highest during the first half notwithstanding the prevailing high pressure. On the first day of the month, however, a temperature of −50° was reported at Eagle, but with pressure below normal.

Over the United States pressure conditions corresponded roughly, but in modified form as a rule, with those over Alaska. With the single marked exception of the abnormally low pressure over the Atlantic States during the early days of the month, the low areas were mostly of a single type having long and narrow troughs north and south, with much precipitation in the central valleys and high eastern temperatures, a condition for which the persistent middle-west Atlantic Ocean high area was responsible. The Atlantic high area as indicated by the reports from Bermuda and Turks Island prevailed with insignificant interruptions throughout the month, and on the morning of the 6th the barometer at Hamilton, Bermuda read 30.70 inches. Over the eastern Atlantic pressure was variable, as indicated by the barometer readings at Horta, but with a tendency to below normal readings, except during the last few days of the month. High pressure prevailed over Iceland from the 21st to the 27th, but, with this exception, pressure was generally low over that region and western Europe with frequent rains, and severe storms at times. This condition, combined with the general pressure distribution westward over the Atlantic Ocean, caused a series of heavy gales over the north Atlantic that is said to be without precedent. At 6 p. m., January 9th, the steamship *Cedric*, while in latitude 46° 5′ N. and longitude 42° 40′ W., reported a barometer reading of 27.49 inches, with northwest winds of hurricane force. Marine casualties were numerous during the month, but, fortunately, with a single exception, none was of grave character. Over continental Europe, except the southwestern portion, pressure distribution was largely similar to that over the Pacific area and Alaska. There were no abnormal departures, except an extensive high area over northern Russia from the 8th to the 15th, inclusive, and a decided low area over central Russia from the 25th to 28th, inclusive. Over southwestern Europe low pressure was the rule, with marked depressions on the 17th, 21st, and 31st, all being parts of the extensive depression to the northward, and all extending northeastward over Germany.

WEATHER IN THE UNITED STATES.

The month was remarkable for the persistence of high pressure over the western Atlantic Ocean with the result that the temperatures were above the normal over the entire central and eastern portions of the country. Over the Atlantic Coast States the month as a whole was with but a single exception the warmest of record, with a preponderance of cloudy and rainy days. The records of Washington, D. C., cover a period of nearly 100 years, and but once during that period (in 1890) has the mean temperature for January exceeded that of the present month, and then only by two-tenths of a degree, while at Philadelphia, Pa., the month was the warmest in the record of 123 years.

At the beginning of the month a depression of fair proportions was central over Manitoba, with a high area of moderate strength over the Rocky Mountains. Temperatures were high and precipitation was unimportant except along the Atlantic Coast. By the evening of the 1st the northwestern depression had moved to Lake Superior and a secondary one had formed over northeastern Texas, so that a narrow trough extended from that locality to Lake Superior. There was no precipitation to the eastward, but westward to the mountains there were light local snows, accompanied by lower temperatures and rapidly rising pressure with a strong crest over southern Idaho. There had also been a rapid rise in pressure to the eastward of the narrow trough. On the evening of the 2d the low-pressure trough extended from Alabama to Georgian Bay and the barometer had fallen decidedly to the eastward, with rapidly rising temperature from the eastern Gulf of Mexico northward, and with rains south of the Ohio River and rains and snows to the northward. Pressure had also fallen considerably over the West and Northwest with a decided rise in temperature over the latter district, but with a fall to nearly normal conditions over the upper Lake region, the central valleys, and the Southwest. Storm warnings were at once ordered for the south Atlantic and east Gulf coasts and during the ensuing 12 hours there was a fall in pressure over the

Atlantic States that was unprecedented in respect to rapidity and extent. The barometer read 28.90 inches over Virginia, a fall of nearly 1 inch in 12 hours and, except over the east Gulf States, there was also a fall westward to the Pacific Ocean, especially over the western slope of the northern Rocky Mountains. General rains were in progress east of the Mississippi River, with some snow north of the Ohio River, and temperature had fallen to somewhat below normal conditions from the Gulf States northward and had risen decidedly over the Plains States, the Rocky Mountain region, and the Northwest. Winds had become high over the South and they were increasing to the northward, and the storm warnings were soon extended to Eastport Me. The pressure continued to fall as the storm center moved northward, and by the evening of the 3d the barometer at Montreal, Canada, read 28.24 inches, a fall of 1.06 inches in 12 hours, and of 1.52 inches in 24 hours. The barometer was below 29 inches as far west as the Pennsylvania-Ohio line and the readings were the lowest of record over the eastern lower Lake region, the Middle Atlantic States, and New England. Rains and snows, severe local storms, and dangerous gales had occurred over the East, and temperatures had fallen considerably although not to low readings, east of the Mississippi River, except in New England. The gales were especially severe, with wind velocities ranging from 50 to 88 miles an hour from the south and southwest from North Carolina northward, and much damage was caused both on land and sea. During the development and passage of this storm another disturbance had developed west of the Rocky Mountains and by the evening of the 4th it was central over northeastern Arizona, with a barometer reading of 29.18 inches at Flagstaff. The general depression extended eastward over the lower Ohio Valley and the west Gulf States, and snow was falling over the extreme central West. Pressure was rising rapidly to the westward and northwestward, accompanied by a decided fall in temperature and by high winds on the California coast for which warnings had previously been ordered. Cold-wave warnings had also been ordered for the Northwest, the extreme central West, and the Southwest. On the morning of the 5th the principal disturbance was central over southwestern Colorado, but a secondary trough had formed over eastern Texas, and snows and rains were falling over the central portion of the country from the Ohio Valley to Colorado. There was a great rise in temperature throughout the South and an equally great fall to typical winter conditions over the West and Northwest. At Havre, Mont., the thermometer read 32° below zero, and the line of zero temperature extended into northeastern Colorado.

Killing frost warnings were ordered for California and cold-wave warnings for the west Gulf States and the Southwest. By the morning of the 6th the low pressure trough had filled considerably, but was still definitely marked from the Texas coast to extreme western Ontario. Snows and rains had fallen generally throughout the Great Basin of the country, and temperatures were unseasonably high east of the Mississippi River and abnormally low westward to the Pacific Ocean. The temperature in north-central Montana fell to 36° below zero, and the line of zero temperature extended into the Texas Panhandle. Freezing temperatures occurred throughout California and over portions of southern California the temperatures were the lowest of record and continued for three days, resulting in losses to the fruit industry that will probably amount to $20,000,000 or more. In the meantime the northern portion of the low pressure trough over the East had entirely disappeared, but the southern portion persisted and began to move northeastward with increasing intensity. General snows and rains continued over the eastern half of the country and in the Southwest, and it was not until the morning of the 9th that the disturbance, now a severe storm, passed off the Newfoundland coast with a barometer reading of 29.10 inches at St. Johns. The weather had cleared east of the Rocky Mountains, and low temperatures prevailed throughout the country, notwithstanding the fact that pressure was again low west of the Rocky Mountains and over the northern Plains States. On the evening of the 7th storm warnings were ordered for the New England coast, and high winds occurred on the following day. Following the passage of the storm cold-wave warnings were ordered on the 5th for the Central West, on the 6th for the west Gulf States, and on the 7th for portions of the east Gulf States and the Northeast. The warnings were not fully verified east of the Mississippi River so far as minimum temperatures were concerned, although the fall amounted to more than 40° in many localities. The heavy, warm rains of the 6th and 7th caused a severe flood in the Ohio River and some of its tributaries, and at Cincinnati the crest stage exceeded 62 feet. Detailed reports of these floods will be found in another portion of this review. On the morning of the 7th a disturbance of pronounced character was central over extreme southern Alaska and storm warnings were ordered on the north Pacific coast. By the morning of the 8th the storm had reached the Washington coast, after which it moved eastward over the Canadian Northwest, reaching Manitoba on the morning of the 9th, by which time a secondary depression had developed over the middle plateau. The gales resulting from this storm were unusually severe and a wind velocity of 72 miles an hour from the south was reported at Tatoosh Island, Wash. During the gale the steamship *Rosecrans* ran aground while endeavoring to enter the Columbia River and was lost, together with 33 of her crew of 36 men. The storm was also very severe over the interior of the North Pacific States, and heavy drifting snows demoralized traffic in the Cascade Mountains. Following the usual procedure of this type of pressure distribution, the northern disturbance continued eastward as a dry low and passed out of the Gulf of St. Lawrence during the 10th. The plateau low was attended by rains and snows, and pressure remained low on the north Pacific coast until the night of the 9th.

On the evening of the 10th an irregular low area covered Colorado, with a narrow arm extending therefrom into southeastern Minnesota, with rapidly rising pressure, local snows, and low temperatures to the northwestward, for which cold-wave warnings had been ordered on the 8th and 9th. Temperatures were again high over the East and South and rains were falling, except in the Middle Atlantic States and New England, the barometer remaining high in the Atlantic States and the adjacent ocean, a distribution similar to that of the preceding storm. By the evening of the 11th, the depression extended in trough shape from the Ohio Valley to northern Ontario with increasing energy, and general rains with high temperature continued over the Ohio Valley and the East and South, while to the northward the weather was clear and decidedly colder with high pressure. The warm and comparatively light southerly winds caused a dense fog during the 11th along the

middle Atlantic and southern New England coasts, with consequent inconvenience and menace to shipping, although casualties were few and unimportant. On the 10th cold-wave warnings were ordered for Nebraska and portions of the Northwest, and on the 11th for the Southwest generally, the west Gulf States, the great central valleys, and southern Wisconsin. The storm continued eastward with its southern end contracting and the northern one increasing in energy, and on the morning of the 12th storm warnings were ordered on the Atlantic coast from Eastport, Me., to Hatteras, N. C., and cold-wave warnings over the East and South generally, except Florida. During the night of the 12th the storm passed off the Newfoundland coast, and on the morning of the 13th high pressure and generally clear weather prevailed east of the Rocky Mountains. A cold wave also covered the East and South, and low temperatures continued in the West, but with marked moderation over the Missouri and upper Mississippi Valleys. During the 11th another disturbance appeared on the north Pacific coast, and storm warnings were ordered early in the morning. It was attended by rains in the north Pacific States, and an offshoot moved eastward to Wyoming, where it disappeared, pressure remaining high to the southward and rising rapidly to the northward, while at the same time the original depression persisted on the north Pacific coast with renewed activity. Pressure continued abnormally high east of the Rocky Mountains with one crest over New England and another over the lower Missouri Valley, and generally clear weather prevailed with moderate temperatures. Rains set in throughout the Pacific States and snows in the extreme northwest. The depression spread slowly to the eastward and southward, but with the original low persisting on the north Pacific coast. The center of depression moved to southeastern Wyoming, where it disappeared after sending to the northeastward an insignificant arm that moved rapidly over Canada to the Gulf of St. Lawrence. Storm warnings were again ordered on the north Pacific coast on the evening of the 14th, and the low-pressure area on the Washington coast persisted with rains in the Pacific States. While the pressure remained low, the fluctuations were frequent and at times decided, and now and then an offshoot would move eastward, leaving the original depression still intact. On the morning of the 16th there was a well-defined disturbance central over northwestern Wyoming, with pressure rising to the northward. Pressure was still abnormally high over the Atlantic Ocean and the Southeast, and as a consequence warm rains were falling from the Ohio Valley eastward. The disturbance moved rapidly, with increasing intensity, eastward to western Lake Superior by way of southern Minnesota, and by the night of the 17th it was somewhere to the northward of the lower St. Lawrence Valley, with pressure rising rapidly from the upper Lake region and the upper Mississippi Valley westward. During the 17th, however, another disturbing element was introduced through the development of a depression over southwestern Illinois. This storm moved northeastward with increasing energy, causing a continuance of the general rains and high temperatures over the East and South, and some snows over the upper Lake region, and it finally passed off the Canadian coast on the morning of the 22d. Following the passage of the low area of the 16th and 17th, cold-wave warnings were ordered on the 16th for portions of the Northwest, including northern Iowa, and by the morning of the 17th there was a decided fall in temperature between the Mississippi River and the Rocky Mountains, with readings between zero and 20° below over the Northwest.

After the passing of the storm of the 17th, it also became considerably colder over the eastern portion of the country, but there was merely a temporary return to normal conditions, as the middle Atlantic high-pressure area still stood as a bar to any extensive movement from the interior. During these changes to the eastward, pressure had remained low over the Pacific Northwest, and on the night of the 16th a narrow trough of barometric depression extended down both slopes of the Rocky Mountains into Colorado, just as the storm immediately preceding had reached Lake Superior. Rains and snows were falling west of the mountains, and pressure was rising rapidly in the rear of the depression, which disappeared entirely during the next 12 hours, with the exception of the northern portion which still persisted over Washington with renewed vigor. It may be remarked in passing that the southern portion of this disturbance and the one that appeared over Illinois on the evening of the 17th were perhaps identical, but, if so, the connection was not apparent on the weather chart. The north Pacific storm became severe during the night of the 17th and on the morning of the 18th was central over western Montana with the low barometer reading of 29.24 inches. Storm warnings had been ordered on the previous day, and severe gales with snow occurred generally. Warnings were also ordered for the California coast on the 18th. The disturbance continued eastward and by the time it had reached the central portion of the country it had assumed the narrow north and south formation characteristic of the depressions of this month, and extended from northern Texas northeastward to Lake Superior. This was on the evening of the 19th, and marked high pressure prevailed on both sides, but thus far there had been no precipitation of consequence east of the Rocky Mountains. Temperatures, however, had risen to much above normal conditions throughout the low area and the districts immediately adjoining. To the northwestward and westward there had been a great rise in pressure accompanied by a cold wave, for which warnings had been issued on the previous day. Warnings were also issued for the upper Lake region and the central West. By the morning of the 20th the disturbance extended from northeastern Texas to Lake Huron and general rains and snows were falling over this area, with abnormally high temperatures in the Lake region, the Ohio Valley, and the South. Storm warnings were then ordered on the Atlantic coast from Norfolk northward and high winds occurred generally during the following 24 hours. The high area followed closely and cold wave warnings were ordered for the Ohio Valley, Tennessee, and northern Mississippi. By the morning of the 21st the storm center had contracted materially and was over the State of Maine. Rains and snows had been general east of the Mississippi River and the high-pressure area with the cold was nearing the Allegheny Mountains. During the 21st the storm passed out into the North Atlantic and the weather had cleared and temperatures had fallen materially to the coast line.

As had been indicated in the weekly forecast issued on the 19th, the cold wave was not severe over the eastern portion of the country, as the high area over the western Atlantic Ocean still barred the way to any uninterrupted transfer of the cold air from the West. On the morning of the 20th pressure was abnormally low over southern Alaska and was falling rapidly over Alberta and the

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north Pacific coast, and by the evening there was a well-defined disturbance central just over the northern Montana line. Temperatures were rising rapidly but there was no precipitation as yet except a little snow and rain in western Montana and in Washington. On the morning of the 21st the depression extended in irregular form from southern Alberta to western Minnesota, with a center of circulation at each end. The forward end continued rapidly eastward without incident, as high pressure persisted over the eastern and southern portions of the country. The western center finally moved southeastward, attended by local snows and rains that became general when, on the morning of the 23d, another southwest-northeast trough extended from northern Texas to Lake Superior, with snows and rains falling to the eastward almost to the coast. Storm warnings were then ordered from Hatteras to Eastport. By the morning of the 24th the northern end of the trough had passed into the Gulf of St. Lawrence, but slight secondary disturbances persisted over Virginia and the lower Mississippi Valley, with local rains still falling. High pressure persisted as usual over the western Atlantic, but, although there was a decided fall in temperature, there was no pressure rise of consequence over the interior, and unsettled weather with occasional light rains continued in the Middle and South Atlantic States until the morning of the 25th, by which time another pronounced low had appeared over the Northwest, coming apparently as another offshoot from the low that still persisted over southern Alaska. Storm warnings for this disturbance had been ordered on the north Pacific coast on the 23d. It moved almost due eastward, attended by a little precipitation over the northern tier of States, but with increasing intensity, and by the evening of the 26th had reached the upper St. Lawrence Valley. On the morning of the 26th a slight depression was noted over southeastern Texas, and by the evening it had reached the mouth of the Mississippi River with much increased development, and storm warnings were ordered on the middle Gulf coast and advisory warnings sent to south Atlantic coast stations. On the morning of the 27th a trough of low pressure extended from Georgia to New Brunswick with strongly defined centers at each extremity and rains were falling throughout this area with a heavy fall in the South, necessitating flood warnings for the rivers of that section. Storm warnings were at once ordered along the Atlantic coast, and moderately high winds occurred along the middle and south coasts. The recovery in pressure following this disturbance was of very brief duration, but there was a moderate cold wave over the central portion of the country for which warnings were ordered on the 26th. The disturbance passed into the Atlantic during the night of the 27th, but at the same time another was developing over the middle Mississippi Valley and another over the Canadian Northwest. It should be remarked, however, that since the 23d high pressure had been persistent west of the Rocky Mountains, and this condition continued at the close of the month. The Middle West disturbance moved to the upper Ohio Valley and then disappeared on the night of the 28th after causing moderate snows in the Ohio Valley and western lower Lake region and later in the Middle Atlantic States and New England. The Canadian Northwest disturbance moved east-southeastward and on the morning of the 29th was central over northeastern Minnesota, leaving a secondary center over southeastern Alberta that also moved southeastward, and on the morning of the 30th another trough of low pressure extended from Oklahoma to Wisconsin with no precipitation preceding it, but with quite general snows to the northwestward, where pressure was rising rapidly with a decided fall in temperature. Cold wave warnings were ordered on the 30th for the Northwest and the upper Lake region and extended on the following morning throughout the Northern States generally and into northern Tennessee. Snow and rain began to fall during the 30th over the low-pressure area and by the end of the month the trough of depression had passed into the Atlantic Ocean without much further development, but with general rains and snows over the entire eastern portion of the country with some high winds along the coast, for which warnings were ordered at the proper time. The cold wave following was the most general one of the month, and during the night of the 31st it reached the Atlantic States, with high pressure over the entire country except the extreme Southwest.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.
New England	12	34.6	+10.2
Middle Atlantic	15	41.7	+10.4
South Atlantic	10	54.7	+ 9.6
Florida Peninsula [1]	9	67.5	+ 8.0
East Gulf	11	54.8	+ 7.4
West Gulf	11	48.4	+ 2.3
Ohio Valley and Tennessee	14	41.6	+ 8.4
Lower Lakes	11	32.7	+ 8.4
Upper Lakes	13	21.5	+ 3.3
North Dakota [1]	9	1.9	− 2.6
Upper Mississippi Valley	14	25.6	+ 4.0
Missouri Valley	12	24.7	+ 3.7
Northern slope	9	17.5	− 1.5
Middle slope	6	30.6	+ 1.5
Southern slope [1]	8	39.7	+ 0.5
Southern Plateau [1]	9	37.2	− 4.6
Middle Plateau [1]	10	21.5	− 3.6
Northern Plateau [1]	10	21.2	− 3.7
North Pacific	7	37.5	− 1.9
Middle Pacific	7	44.4	− 2.9
South Pacific	4	49.0	− 1.9

[1] Regular Weather Bureau and selected cooperative stations.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.
		Current month.	Percentage of normal.	Current month.
New England	11	3.33	92	−0.30
Middle Atlantic	15	2.84	85	−0.50
South Atlantic	11	2.41	62	−1.50
Florida Peninsula [1]	9	2.25	82	−0.50
East Gulf	11	5.11	102	+0.10
West Gulf	10	3.63	124	+0.70
Ohio Valley and Tennessee	14	8.24	215	+4.40
Lower Lakes	10	5.15	194	+2.50
Upper Lakes	13	1.65	80	−0.40
North Dakota [1]	9	0.52	84	−0.10
Upper Mississippi Valley	15	2.17	123	+0.40
Missouri Valley	12	0.79	80	−0.20
Northern slope	9	1.24	148	+0.40
Middle slope	6	0.41	58	−0.30
Southern slope [1]	8	0.47	48	−0.50
Southern Plateau [1]	9	0.40	50	−0.40
Middle Plateau [1]	11	0.67	63	−0.40
Northern Plateau	10	2.02	125	+0.40
North Pacific	7	7.33	111	+0.70
Middle Pacific	7	4.12	87	−0.60
South Pacific	4	1.98	72	−0.80

[1] Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departure from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	76	0	Missouri Valley	71	− 4
Middle Atlantic	77	+ 1	Northern slope	73	+ 3
South Atlantic	82	+ 5	Middle slope	63	− 4
Florida Peninsula	82	+ 1	Southern slope	62	− 4
East Gulf	82	+ 4	Southern Plateau	60	+10
West Gulf	76	0	Middle Plateau	70	0
Ohio Valley and Tennessee	80	+ 3	Northern Plateau	78	− 2
Lower Lakes	80	− 1	North Pacific	89	+ 4
Upper Lakes	82	− 1	Middle Pacific	76	− 5
North Dakota	86	+ 6	South Pacific	65	− 7
Upper Mississippi Valley	79	+ 1			

Average cloudiness and departure from the normal.

New England	6.5	+0.6	Missouri Valley	4.8	−0.2
Middle Atlantic	6.3	+0.5	Northern slope	6.2	+1.1
South Atlantic	6.2	+0.9	Middle slope	4.2	+0.1
Florida Peninsula	4.0	−0.8	Southern slope	4.4	0.0
East Gulf	6.3	+0.6	Southern Plateau	2.9	−0.5
West Gulf	5.6	+0.3	Middle Plateau	4.3	−0.8
Ohio Valley and Tennessee	7.1	+0.7	Northern Plateau	7.4	+0.7
Lower Lakes	7.7	+0.3	North Pacific	8.2	+0.7
Upper Lakes	7.8	+0.9	Middle Pacific	4.6	−1.0
North Dakota	5.4	+0.5	South Pacific	3.8	−0.7
Upper Mississippi Valley	6.5	+1.1			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Atlanta, Ga	3	58	sw.	New Haven, Conn	3	53	sw.
Block Island, R. I	3	65	sw.	New York, N. Y	3	86	se.
Do	4	70	sw.	Do	4	74	nw.
Do	8	50	nw.	Do	8	64	nw.
Do	12	54	nw.	Do	12	66	nw.
Do	13	50	nw.	Do	18	79	w.
Do	18	60	w.	Do	19	50	nw.
Do	19	57	w.	Do	21	62	nw.
Do	21	54	nw.	Do	31	60	sw.
Buffalo, N. Y	3	52	w.	Norfolk, Va	3	64	nw.
Do	4	56	w.	North Head, Wash	1	62	se.
Do	17	52	sw.	Do	3	66	nw.
Do	18	66	sw.	Do	7	70	s.
Do	23	60	w.	Do	8	56	s.
Do	26	60	sw.	Do	11	76	s.
Do	31	70	w.	Do	13	56	se.
Burlington, Vt	3	60	s.	Do	15	60	se.
Canton, N. Y	3	50	e.	Do	20	50	s.
Cheyenne, Wyo	2	50	nw.	Do	23	60	s.
Do	3	54	nw.	Do	24	52	s.
Cleveland, Ohio	18	60	w.	Pensacola, Fla	26	60	s.
Columbia, S. C	3	56	sw.	Philadelphia, Pa	3	52	s.
Columbus, Ohio	18	58	nw.	Pittsburgh, Pa	18	58	sw.
Duluth, Minn	9	56	sw.	Point Reyes Light, Cal	3	75	nw.
Eastport, Me	4	50	s.	Do	4	86	nw.
El Paso, Tex	5	50	sw.	Do	8	59	s.
Hartford, Conn	3	58	sw.	Do	11	52	s.
Hatteras, N. C	3	60	w.	Do	12	51	s.
Do	4	63	w.	Do	13	62	s.
Helena, Mont	2	70	sw.	Do	14	66	s.
Do	25	50	sw.	Do	16	72	s.
Lander, Wyo	17	64	w.	Do	17	51	s.
Do	18	58	sw.	Do	18	60	s.
Memphis, Tenn	20	54	nw.	Raleigh, N. C	3	50	sw.
Mount Tamalpais, Cal	1	54	nw.	Rapid City, S. Dak	18	51	w.
Do	3	67	nw.	Richmond, Va	3	61	sw.
Do	4	67	nw.	Savannah, Ga	3	58	w.
Do	5	51	n.	Southeast Farallon, Cal	3	56	nw.
Do	6	52	ne.	Do	4	66	nw.
Do	8	51	sw	Do	5	50	n.
Do	11	52	s.	Do	14	50	s.
Do	12	50	sw.	Do	16	50	sw.
Do	14	52	sw.	Syracuse, N. Y	4	50	nw.
Do	16	65	sw.	Do	18	50	nw.
Mount Weather, Va	3	65	w.	Do	20	51	s.
Do	4	60	w.	Do	23	54	s.
Do	8	62	nw.	Tatoosh Island, Wash	3	56	w.
Do	9	54	nw.	Do	7	52	s.
Do	12	74	nw.	Do	12	58	e.
Do	18	54	w.	Do	20	64	sw.
Do	19	50	nw.	Toledo, Ohio	18	56	w.
Do	21	60	nw.				
Nantucket, Mass	3	63	sw.				
Do	4	69	sw.				

RIVERS AND FLOODS, JANUARY, 1913.

By ALFRED J. HENRY, Professor, in Charge River and Flood Division.

Barometric depressions during January, 1913, after reaching the Mississippi Valley, almost without exception assumed the form of an elongated ellipse, or trough of low pressure; these depressions had a very slow drift from the southwest to the northeast, or almost parallel with the course of the Ohio watershed, and they succeeded one another with a regularity not often experienced in the winter season. As a result the temperature in the interior valleys and the eastern part of the United States was unduly high, the prevailing winds being southerly, from the Gulf of Mexico, were moist and thus ideal conditions prevailed for abundant rainfall throughout the paths of the slowly moving depressions above mentioned. To what extent these conditions were realized may be seen by an inspection of Precipitation Chart No. V, which is a part of this Review. The locus of the heavy rains in the early part of the month was in the lower Ohio Valley, including Tennessee, Arkansas, and the northern portion of the Gulf States. Toward the end of the month the locus of heavy rain seemed to shift a little farther northward so as to embrace, in addition to the immediate lower Ohio Valley, the States of Ohio, Indiana, and Illinois.

The above-described depressions and the precipitation attendant upon them arrived over the Ohio Valley and adjacent regions to the southwest and south in such sequence and with such a short time interval separating them as to make damaging floods in the Ohio and its tributaries inevitable. That the floods in the Ohio River were not more severe was due primarily to two facts, as follows: First, the ground was not frozen and the run-off was therefore not so great as it might have been and, second, there was an absence of snow over the watershed that very much modified and lessened the danger of the situation. Another point of dissimilarity between the January, 1913, flood and previous floods was the fact that the first named was a rain flood in which the bulk of the rain fell over the watershed on the north bank of the river. It is true that heavy rains also fell in Kentucky and Tennessee during the first half of the month but during the last half of the month the heavy rains which fell over Ohio, Indiana, and Illinois were fortunately not coincident with heavy rains over the southern tributaries. It was to the heavy rains over the treeless States of Ohio, Indiana, and Illinois that both the intensity and duration of the flood in the lower Ohio was due. It is estimated that at least 4 feet of the stage on the Cairo gage was due to water contributed by the White and Wabash Rivers. In the upper reaches of the river there were two distinct flood waves, the first one passed Pittsburgh, Pa., on the 9th with a crest stage of 31.3 feet, nearly 4 feet below the flood of March, 1907. The second wave was less severe and farther down river it was not noticed.

At Cincinnati a crest stage of 62.2 feet was reached on the 15th and a portion of the water at this stage was due to local rains which fell over the immediate watershed near Cincinnati. From Cincinnati to Cairo and especially at the latter point, the stage of the river was continually being increased and the high stages prolonged by heavy local rains over the immediate watershed of the river, especially over the watershed in Indiana and lower Illinois. At the end of the month the flood was passing into the Mississippi River at Cairo and the Ohio at that point was falling. Fortunately for the dwellers along the Mississippi that stream was low when it received the Ohio flood, otherwise a repetition of the experiences of 1912 might have been probable. For further details of the Ohio flood see the report of Prof. F. J. Walz, district editor (No. 3).

Elsewhere in the United States the rivers were within bounds, except in the Carolinas, Alabama, and Mississippi, where they passed flood stages during the last week of the month. Floods also occurred in the White River and the Black River of Arkansas and in the Ouachita River at Camden, Ark. Further details of these floods are communicated in the reports of District Editors Von Herrmann and Cline, respectively.

SUMMARY OF MONEY LOSS OCCASIONED BY THE OHIO FLOOD.

Efforts have been made to secure details of money loss by the Ohio flood that shall be more accurate than the crude guesses sometimes made. From the nature of the case nothing short of a census of the devastated districts will yield accurate returns of the loss suffered, yet where the loss and damage are confined to the congested river districts of large cities, fair estimates of certain classes of loss or damage may be obtained; for example, those due to actual loss of or damage to tangible property as well as the money spent in cleaning up basements and cellars and in putting machinery in serviceable condition may be readily computed.

Money value of property destroyed or damaged in Ohio River flood of January, 1913.

From above Pittsburgh to Wheeling	$500,000.00
Parkersburg district	20,000.00
Cincinnati district	106,000.00
Louisville district	200,000.00
Evansville to Cairo	100,000.00
Total for Ohio River	926,000.00
Other watersheds tributary to the Ohio:	
Cumberland River (Nashville district)	164,070.00
White and Wabash Rivers	81,000.00
Total	245,070.00
Total for Ohio watershed	1,171,070.00
Property loss in all other districts:	
White River of Arkansas	20,000.00
Rivers of South Carolina	3,500.00
Total	23,500.00
General property loss excluding crops and loss due to suspension of business, grand total	1,194,570.00
Loss to crops:	
Nashville district (Cumberland River)	11,650.00
Indiana and Illinois (Indianapolis district)	54,500.00
Kentucky (Louisville district)	50,000.00
Total crop loss	116,150.00

Money loss due to suspension of business, loss of wages, etc.:	
Pittsburgh district	$150,000.00
Cincinnati district	400,000.00
Louisville district	100,000.00
Nashville district	65,750.00
Indiana and Illinois	34,500.00
South Carolina rivers	4,000.00
Total loss due to suspension of business, etc	754,250.00
Grand total of all losses	2,064,970.00

The above is probably not overestimated, considering the far-reaching effects of the flood and the impossibility of getting accurate returns from remote quarters. It is probable, however, that such losses as have been reported are somewhat exaggerated, since there is an element in human nature which tends toward an overstatement of one's own personal loss. On the other hand it must be considered that Weather Bureau officials have not the means at their disposal to make a thorough canvass of the loss sustained. The official in charge of the Cincinnati district undertook to collect data of loss and damage by means of circular letters of inquiry mailed to persons in the flood-swept districts; he was obliged, however, to admit that his statistics so collected probably included only about 90 per cent of the actual loss. The large loss to crops reported from Indiana and Illinois was based on the probable destruction of the crop of wheat on the overflowed lands in those States. Whether that crop will be a total loss or not is yet problematical.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a ———.

Abbot, C. G., & Aldrich, L. B.
Smithsonian pyrheliometry revised. Washington. 1913. 7 p. 8°. (Smithsn. misc. coll., v. 60, no. 18.)

Alsace-Lorraine. Meteorologische Landesanstalt.
Deutsches meteorologisches Jahrbuch für 1907, Elsass-Lothringen. Strassburg. 1912. 58, 17 p. f°.

Amundsen, Roald.
The south pole. An account of the Norwegian antarctic expedition in the "Fram," 1910–1912. London. 1912. 2 v. 8°. [Appendix 2: Remarks and meteorological observations at Framheim, by B. J. Birkeland.]

Association des licenciés sortis de l'université de Liége.
Le Katanga, province Belge. [Liége. 1911.] 154 p. 8°. [Chapter 3: Climate.]

Bouches-du-Rhône. Commission de météorologie.
Bulletin annuel, 1911. Marseille. 1912. viii, 106 p. 4°.

Buitenzorg. Institut botanique de l'état.
Observations météorologiques. Année 1911. [Batavia.] n. d. 12 l. f°.

Carpenter, Ford A.
The climate and weather of San Diego, California. [Harrisburg, Pa.] 1913. xii, 118 p. 16°.

Chemulpo (Korea). Meteorological observatory.
Annual report, 1911. Chemulpo. 1912. var. pag. 4°.

Chovet, J.
Essais sur la résistance de l'air et le calcul des aéroplanes. Grenoble. 1911. 49 p. 4°.

Denmark. Danske meteorologiske Institut.
Meteorologisk Aarbog for 1909. 2n Del. Kjøbenhavn. 1912. [3], 98 p. f°.
Meteorologisk Aarbog for 1911. 1ste Del. Kjøbenhavn. 1912. [4], 148 p. f°.

[Dorno, C.]
Das physikalisch-meteorologische Observatorium Davos. [Braunschweig. 1912?] 12 p. 8 pl. 8°.

Eredia, Filippo.
La variazione diurna della temperatura in Italia. Roma. 1912. 43 p. f°. (*Reprint:* R. Uffic. centr. meteorol. e geodinam., Annali, v. 34, pt. 1, 1912.)

Forni, Giovanni.
Sull' umidità atmosferica in Milano nei decenni 1880–89, 1890–99, 1900–09. Milano. 1912. 11 p. 1 pl. f°. (Milan. Reale osserv. astronom. di Brera. Pub. no. 49.)

France. Bureau central météorologique.
Annales, année 1910, II. Observations. Paris. 1912. var. pag. f°.

Friederichshafen. Drachenstation am Bodensee.
Ergebnisse der Arbeiten im Jahre 1912. Stuttgart. 1913. v, 64 p. f°. (Kgl. Württemb. statist. Landesamt. Pub.)

Froc, Louis.
La pluie en Chine durant une période de onze années, 1900–1910. Première partie. Chang-hai. 1912. 62 p. 3 pl. f°. (Zi-ka-wei. Observatoire, Bull. météorol. de 1910, App.) [Includes a list of present and former rainfall stations throughout China, with chart showing locations. Collected data of rainfall by months and years.]

Gorczyński, Władysław.
Materyały do poznania opadów w Królestwie Polskiem (okres 1901–1910). . . Précipitations observées en royaume de Pologne pendant la période 1901–1910, avec une Supplément contenant les précipitations à Varsovie (1803–1910) et à Jedrzejów (1886–1905). [Polish text; French résumé.] Warszawa. 1912. xxv, 157 p. 8°. (Soc. sci. de Varsovie. Pub.)
O opdach w Warszawie. Sur les précipitations à Varsovie. [Polish text; French résumé.] Warszawa. 1911. 349–386 p. 8°. (*Reprint:* Compt. rend., Soc. sci. de Varsovie., 1911. 4 année, fasc. 8.)

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O zmienności opadu . . . Sur la variabilité des précipitations d'après les observations faites à Varsovie depuis 1803. [Polish text; French résumé.] Warszawa. 1911. 453–485 p. 8°. (*Reprint:* Compt. rend., Soc. sci. de Varsovie, 1911, 4 année, fasc. 9.)
Wiadomość o pomiarch insolacyjnych, . . . Note sur les mesures de l'insolation effectuées à Varsovie pendant l'éclipse du soleil le 17 avril 1912. [Polish text; French résumé.] Warszawa. 1912. 327–340 p. 8°. (*Reprint:* Compt. rend., Soc. sci. de Varsovie, Cl. d. sci. math. et nat., 1912, 5 année, fasc. 5.)
O pewnym wzorze Bemporade. [Polish.] Warszawa. 1912. 215–222 p. 8°. (*Reprint:* Wiad. matem., t. 16.)

Guadalajara. Observatorio del Seminario.
Observaciones, Resumen por 1908, 1909, 1910 y 1911. Guadalajara. 1910–1913. 3 v. 8°.

Halbfass, W.
Der gegenwärtige Stand der Seenforschung, I. Topographie, Hydrographie, Geologie der aussereuropäischen Seen. Berlin. 1912. 66 p. 8°.

Hall, Maxwell.
A report on the storms and hurricanes in Jamaica, November, 1912. Kingston. 1913. 16 p. f°. (Jamaica. [Meteorological service.] Pub. no. 411.)

Highet, H. Campbell.
The Climate of Bangkok [1902–1911]. Bangkok. 1912. 38 p, 5 chts. 8°.

India. Meteorological department.
Report on the administration, 1911–12. [Simla. 1912.] 16 p. f°.

Lindenberg. Kgl. preuss. aeronautisches Observatorium.
Die Arbeiten im Jahre 1911. 7. Band. Braunschweig. 1912. xlv, 288 p. f°.

Manchester university. Meteorological department.
Report on the investigation of the upper atmosphere, 1912. [Manchester. 1913.] 18 l. 4°.

Marini, L.
Manuale per le osservazioni meteorologiche a mare. Testo e tavole. Venezia. 1912. 2 pts. 4°.

[Mellish, Henry.]
The Weather of 1912 at Hodsock Priory, Worksop. n. t. p. [1913.] 9 p. table. 8°.

Messeri, V[incenzo].
In memoria di Costantino Pittei. Bologna. 1912. 8 p. 8°.

Moscow. Institut agronomique. Observatoire météoroligique.
Observations, 1909, 1910. Moskva. 1912. 2 vols. 8°.

Müller, G. & Kron, E.
Die Extinktion des Lichtes in der Erdatmosphäre und die Energieverteilung im Sonnespektrum, nach spektralphotometrischen Beobachtungen auf der Insel Teneriffa. Potsdam. 1912. 92 p. 2 pl. fron t.4°. (Potsdam. Astrophys. Observ. Pub. No. 64.)

Millot, C.
Comment la lune pourrait influencer le temps. Nancy. 1912. 10 p. 8°. (*Reprint:* Acad. de Stanislas, Mém. 1912–13.)

Nippoldt, A.
Erdmagnetismus, Erdstrom und Polarlicht. 2. verb. Aufl. Berlin. 1912. 143 p. 16°. (Sammlung Göschen, No. 175.)

Nutting, P. G.
Outlines of applied optics. Philadelphia. 1912. ix, 234 p. 8°.

Philippine Islands. Weather bureau.
Annual report, 1909. Pts. 1 & 2. Manila. 1912. 174 p. 4°.

Société de géographie de Finlande.
Atlas de Finlande, 1910. [French edition.] Helsingfors. 1910–1911. 2 v. & Atlas. f°. [Meteorology is treated in vol. 1, pts. 16–19, by Johansson, etc.]

Tananarive. Observatoire de Madagascar.
Observations météorologiques, 1911. 23me vol. Tananarive. 1912. vi, 273 p. 8°.

[Turkestan. Hydrometric service.]
Otchet, 1910. S-Peterburg. 1911. 2 v. 4°. [Table of contents and account of organization of Hydrometric service also in English. Rest of text in Russian.]

United Provinces of Agra & Oudh. Meteorologist.
Administration report of the meteorologist at Allahabad, 1908–09, 1911–12. Allahabad. 1909, 1912. 2 v. f°.
Brief sketch of the meteorology of the United Provinces and adjacent parts of Rajputana and the Panjab, 1911. Allahabad. 1912. 7 p. f°.

Uruguay. Instituto meteorológico nacional.
Rio de la Plata, Puerto de Montevideo, Años 1906 á 1910. n. t. p. no pag. 4°.

Vaucluse. Commission météorologique.
Compte-rendu pour l'année 1911. Avignon. n. d. 32 p. f°.

Venice. Ufficio idrografico.
Terza relazione annuale, 1911. Venezia. 1912. 71 p. 4°. (Pub. 36.)

Voorhees, John. F. *comp.*
Climatology of Knoxville, Tenn., [1871–1910]. [Rochester, N. Y. 1913.] 16 p. 8°.

Weigt, Herkulan.
Dzienny bieg temperatury w Krakowie według 28-letnich spostrzeżeń. [Der tägliche Gang der Lufttemperatur in Krakau nach 28-jährigen Beobachtungen.] [Polish text; German abstract.] Kraków. 1910. [iii], 35 p. 8°. (*Reprint:* Sprawozd. Kom. fizyogr., tomu 44.)

Wpływ zachmurzenia na dzienny bieg temperatury w Krakowie. [Ueber den Einfluss der Bewölkung auf den täglichen Temperaturgang in Krakau.] [Polish text; German abstract.] Kraków. 1912. 21, 26 p. 8°. (*Reprint:* Sprawozd. Kom. fizyogr., tomu 45.)

RECENT PAPERS BEARING ON METEOROLOGY.

C. FITZHUGH TALMAN, Junior Professor in Charge of Library.

The subjoined titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau. Unsigned articles are indicated by a ———.

Astrophysical journal. Chicago. v. 37. January, 1913.
Very, Frank W. A high-level measurement of solar radiation. p. 25–30.
Very, Frank W. A criterion of accuracy in measurements of atmospheric transmission of solar radiation. p. 31–47.

Engineering news. New York. v. 69. 1913.
Treat, C. H. Air measurement by Pitot tubes. p. 204–209. (Jan. 30). [Abstract.]
Grant, Kenneth C. The flood of January 9, 1913, at Pittsburgh, Penn. p. 230–233. (Jan. 30.)
Berg, Ernst J. Lightning protection of buildings. p. 240–242. (Feb. 6.)
Berg, John. Increased flow of springs just before rains. p. 321. (Feb. 13.)

Meteorological society of Japan. Journal. Tokyo. 32d year. January, 1913.
Sano, K. On the seiches of Lake Tôya. p. 1–9.

Nature. London. v. 90. Jan. 30, 1913.
Evershed, J[ohn]. Luminous hâlos surrounding shadows of heads. p. 592.
Fermor, L[ewis] L[eigh]. Luminous halos surrounding shadows of heads. p. 592–593.

Physical review. Lancaster, Pa. 2d ser. v. 1. February, 1913.
Gilchrist, Lachlan. An absolute determination of the viscosity of air. p. 124–140.

Popular science monthly. New York. v. 82. March, 1913.
Talman, Charles Fitzhugh. The language of meteorology. p. 272–279.

Royal astronomical society of Canada. Journal. Toronto. v. 6. November–December, 1912.
Steadworthy, A. Photographing lightning. p. 322–323.

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Chambers, W. Irving. Aviation to-day and the importance of a national aerodynamic laboratory. p. 124–126.

Seismological society of America. Bulletin. Stanford University. v. 2. December, 1912.
Scherer, J. Remarkable earthquake sounds in Haiti. p. 230–232.

Aérophile. Paris. 21 année. 15 janvier 1913.
——— Mort de M. Léon Teisserenc de Bort. p. 44–45.

Astronomie. Paris. 27 année. Février 1913.
——— La plus haute altitude atteinte en ballon-sonde. p. 90–91. [Particulars of ascent from Pavia to 37,700 metres.]
Reynoso, Raf. A propos des mistpoeffers. p. 91–92. [Note on brontidi in San Domingo.]

Ciel et terre. Bruxelles. 33 année. Décembre 1912.
Poskin, P. A propos de météorologie agricole. p. 388–393.

Ciel et terre. Bruxelles. 34 année. Janvier 1913.
L., E. Le "gouffre" ou mistpoeffers de l'île d'Haïti. p. 35–36.

Cosmos. Paris. 62 année. 6 février 1913.
——— Les résultats des niagaras paragrêles. p. 141–142.
Saderra Masò, M[iguel]. Le mauvais temps dans les îles Philippines. (1911–1912). p. 162–164. [With chart of four typhoons that crossed the Philippines in October and November. 1912.]

Nature. Paris. 41 année. 1913.
——— Influence de la lune sur les phénomènes météorologiques. suppl. p. 53. (18 jan.)
Loisel, J[ulien]. Léon Teisserenc de Bort. p. 159–160. (1 fév.) [With portrait.]

Annalen der Hydrographie und maritimen Meteorologie. Berlin. 41 Jahrgang. Heft 2. 1913.
Köppen, W[ladimir]. Zusammenhang der Luftdruckabweichungen über Island, den Azoren und Europa. p. 69–72.
Lütgens, Rudolf. Vorläufiger Bericht über maritim-meteorologische Untersuchungen auf einer Reise nach Westindien. p. 73–76.

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Richter, Wilhelm. Die geographische Verteilung der Eis-, Frost- und Hitzetage im deutschen Reich. p. 13–44.
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Defant, A[lbert]. Die Windverhältnisse in kalten und warmen Luftsäulen und weitere Folgerungen über das Wesen dieser Gebilde. p. 161–177.
Wigand, Albert. Untersuchungen über Dunstschichten und Temperaturinversionen im Freiballon mit Messungen der Kondensationskernzahl. p. 178–198.
Hesselberg, Th. Über die Luftbewegung im Zirrusniveau und die Fortpflanzung der barometrischen Minima. p. 198–205.
Wegener, Kurt. Die Wirkung der Berge auf eine sie übersteigende Luftsäule. p. 206–208.

Internationale Monatsschrift für Wissenschaft, Kunst und Technik. Berlin. 7. Jahrgang. Oktober 1912.
Hellmann, G[ustav]. Julius von Hann. p. 2–15. [With portrait.]

Lindenberg. K. preussisches aeronautisches Observatorium. Arbeiten. Braunschweig. 7. Band. 1911.
Reger, Josef. Bericht über die Tätigkeit des Warnungsdienstes für Luftfahrer während des deutschen Rundfluges 1911. p. 223–227.
Bongards, Hermann. Bericht über den Warnungsdienst für Luftfahrer in den Jahren 1911 und 1912. p. 229–234.
Tetens, Otto. Über den Einfluss der atmosphärischen Bestandteile auf die barometrische Höhenmessung. p. 235–241.
Peppler, Wilhelm. Zur Kenntnis der vertikalen Luftbewegungen. 243–251.
Peppler, Wilhelm. Die Zustandskurve der Temperatur im oberen Teile der Troposphäre und beim Übergang in die Stratosphäre nach den Lindenberger Registrierballonaufstiegen. p. 253–259.
Reger, Josef. Die Temperaturabnahme mit der Höhe nach den Vormittagsaufstiegen des Jahres 1911. p. 261–265.
John, Hermann. Übersicht über die Verteilung sämtlicher in der Zeit von 1899 bis einschl. 1911 am aeronautischen Observatorium ausgeführten Drachen-, Fesselballon- und Registrierballonaufstiege auf die einzelnen Tagesstunden. p. 267–271.
Tetens, Otto. Das Zehn- bis Hundertfache der Tangenten und Cotangenten für jeden zehntel Grad. Tafel zur Auswertung einfach verfolgter Pilotballonaufstiege. p. 273–288.

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Church, J[ames] E[dward jr.] Das Verhältnis des Waldes und des Gebirges zur Erhaltung des Schnees. p. 1–10.
Wigand, Albert. Über die Natur der Kondensationskerne in der Atmosphäre, insbesondere über die Kernwirkung von Staub und Rauch. p. 10–18.
Myrbach-Rheinfeld, Otto v. Über den Einfluss der täglichen Luftdruckänderungen (Isallobaren) auf das Wetter in den nördlichen österreichischen Alpenländern. p. 18–28.
Gockel, A. Der jährliche Gang der Luftelektrizität auf der südlichen Halbkugel. p. 29.
Hann, J[ulius] v. Der jährliche Gang der Luftelektrizität auf der südlichen Halbkugel. p. 30.
——— Einige Ergebnisse der Münchener Ballonaufstiege. p. 31.
Swoboda, Gustav. Regengüsse und Hochwasser in Nordtirol vom 7. bis 9. Mai 1912. p. 31–34.
Hellmann, G[ustav]. Die Ursache der ungewöhnlichen Trübung der Atmosphäre im Sommer 1912. p. 34–36.
Steiner, L. Zur atmosphärischen Trübung im Sommer 1912. p. 36–37.

Meteorologische Zeitschrift—Continued.

Thraen, Aug. Tabelle für die Darstellung der jährlichen Regenperiode nach Angots relativen pluviometrischen Koeffizienten. p. 37–39.

Hildebrandsson, H[ugo] H[ildebrand]. Über das vorläufige Reglement der internationalen meteorologischen Organisation. p. 39–41.

X., A. Weber: Nachweis für die Zuverlässigkeit der Haarhygrometerangaben von relativen Feuchtigkeitsgraden über 100 Proz. p. 41–42.

Woeikof, A. Die behauptete Austrocknung West- (oder russisch) Turkestans. p. 43.

Ficker, H[einrich] v. Zum Klima von Turkestan. p. 43–44.

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Amsler, Alfred, & Rudio, Ferdinand. Jakob Amsler-Laffon. p. 1–17. [With portrait.]

Physikalische Zeitschrift. Leipzig. 14. Jahrgang. 1. Januar 1913.

Simpson, George C. Instrumente zur Beobachtung der atmosphärischen Elektrizität. (Instruments for atmospheric electricity.) p. 41–45. [Describes several simple instruments.]

Weltall. Berlin. 13. Jahrgang. 1. Dez.-Heft. 1912.

Weinek, L[adislaus]. Über die Dauer der Dämmerung und des Auf- bezw. Unterganges der Sonnen- oder Mondscheibe. p. 65–68.

THE EFFECT UPON ATMOSPHERIC TRANSPARENCY OF THE ERUPTION OF KATMAI VOLCANO.

By Prof. HERBERT H. KIMBALL, Mount Weather, Va.

Katmai Volcano is in the Aleutian Range, Alaska, latitude 58° N., longitude 155° W., approximately. (See map, p. 155.) On the afternoon of June 6, 1912, it suddenly became explosively eruptive, continued in a state of great activity for about three days, and was reported to be still somewhat active at the end of October, 1912. A newspaper clipping from Seward, Alaska, dated January 16, 1913, states: "For the first time since its eruption on June 6, 1912, Mount Katmai and surrounding mountains are visible."

Brief descriptions of this eruption have already been published,[1] and we may expect an exhaustive report from a representative of the National Geographic Society in the near future.[2] The reader is referred to these for details of the eruption, which seems to have surpassed that of Krakatoa in 1883 in the quantity of material discharged into the atmosphere, although the explosions were much less violent.

In the preparation of this paper data relative to the detonations that accompanied the eruption, the fall of ash that followed, and a hazy or smoky condition of the atmosphere that prevailed in British Columbia and the United States during the latter part of June, 1912, have been derived from the following sources:

1. The descriptive papers already referred to.
2. Extracts from the meteorological reports for June, 1912, of the cooperative observers of the Weather Bureau.
3. Replies to a circular letter dated December 7, 1912, addressed to officials in charge of Weather Bureau stations and requesting copies of all notes made in the Daily Local Record since June 1, 1912, relative to the occurrence of any special hazy or smoky conditions of the atmosphere, or of unusually brilliant colors at sunrise or sunset.
4. Extracts from the meteorological reports of observers in British Columbia, which were kindly forwarded to the Chief of the Weather Bureau by the Director of the Meteorological Service of Canada.
5. Extracts from the logs of ships sailing on the North Pacific Ocean in June, 1912.
6. Replies to a circular letter of December 28, 1912, addressed to the members of the Astronomical and Astrophysical Society of America and requesting copies of any observational data they might have bearing upon the subject of diminished atmospheric transparency since June, 1912.

Detonations.—There is a wide range in the time at which the detonations were first heard at different places. At Seldovia, 155 miles from Katmai, explosions were heard before noon of the 6th. On board the steamship *Dora*, in Shelikof Strait, and only about 75 miles from Katmai on the afternoon of June 6, detonations were not heard until 1 p. m., and almost immediately afterwards a sheet of flame was seen to shoot from the volcano high into the air.

At Cordova, 360 miles from the volcano, explosions were first heard at 7 p. m., of June 6; at Copper Center, 450 miles distant, they were recorded as heard on June 7; while at Chicken, more than 600 miles distant, they were first heard at 2.30 p. m., of the 6th, and continued until 6 a. m., of the 9th, at intervals of two or three minutes for the first few hours, then some at longer intervals, and again some in quick succession.

At Cordova the detonations were described as resembling signal guns at five-second intervals, but varying in volume, and were not mentioned after 10 p. m., of June 7. At Seldovia they were last heard on the 10th.

If we take into account the difference in local time between Chicken, Alaska, and Shelikof Strait (13° in longitude corresponds to a difference of nearly one hour), then the time at which explosions were first heard at Chicken and on board the steamship *Dora* are in fairly close agreement, and we must conclude that preliminary explosions that were audible at Seldovia were not heard at either of these places.

At Kodiak, 100 miles from the volcano, peals of thunder attracted attention rather than volcanic explosions. Severe thunder storms appear to have accompanied the dense smoke cloud, and did not occur far from it, as none were mentioned at Seldovia. On the 7th, from the steamship *Dora*, then in Cook Inlet, the smoke cloud could be seen carried to the south and east by the prevailing northwest surface wind.

Earth tremors were reported at several places, but there were no destructive shocks.

Fall of volcanic ash.—At Amalik Bay, 15 miles southeast of the volcano, ashes fell to a depth of 55 inches. At Kodiak, 100 miles to the east, the depth was 10 inches. At Naknek, less than 100 miles to the northwest, the fall was 4 inches, while at Seldovia, 155 miles to the northeast, it was less than an inch.

Reports show that light falls of ash extended in latitude from Rampart, Alaska, latitude 65½° N., to Loring, Alaska, latitude 55½° N., and again in the State of Washington to latitude 48½° N. In longitude the fall extended from Nushagak, Alaska, longitude 158½°; to Chicken, Alaska, longitude 142°; to Loring, Alaska, longitude 131°, and in the State of Washington to longitude 122½°.

In this connection the notes made by Mr. J. E. Hissong, in charge of the Weather Bureau office at Tatoosh Island, Wash., are of special interest:

June 10. Light deposit of fine white ash found on southwest side of storm-warning tower at noon. Evidently carried by wind from volcanic explosions in southwestern Alaska.

June 11. No smoke or dust perceptible at station except a slight deposit on windows where rain drops strike.

June 12. No smoke or dust noticeable to-day. Yesterday's rain probably cleared the air.

June 13–14. During the evening of the 13th the air was filled with a very fine ash and smoke, a light deposit being noted on office furniture on the morning of the 14th.

At Olga, Wash., on June 10, the following note was made:

Haze. Volcanic ash, supposed to be from Alaska. All polished metal tarnished very quickly.

[1] Volcanoes in Alaska. Nat. Geog. Mag., August, 1912, v. 23, p. 824–832.
Dailey, I. M. Report of the Eruption of Katmai Volcano. Bull. Amer. Geog. Soc., September, 1912, v. 44, pp. 641–644.
McAdie, A. G. Recent Pacific Volcanic Eruptions and Atmospheric Phenomena. Meteorological Chart of the North Pacific Ocean, February, 1913.
McAdie, A. G. Taal, Asama-Yama, and Katmai. Bull. Seismol. Soc. Amer., v. 2, pp. 233–242.
Clark, George Archibald. The Katmai Eruption. Bull. Seismol. Soc. Amer., v. 2, pp. 226–229.

[2] Martin, George C. The Recent Eruption of Katmai Volcano in Alaska. Nat. Geog. Mag., February, 1913, v. 24, pp. 131–181.

Mr. Walter S. Adams contributes the following from the Mount Wilson Solar Observatory, Pasadena, Cal.:

The coelostat mirrors in the top of the 150-foot tower were freshly silvered about July 25. On August 3 the coats were very bright and fresh, but on August 5 we found them covered with minute round black spots, which under a microscope were seen to be actual discolorations in the silver film. The larger spots had a nucleus but the smallest spots had none. I have never observed such a phenomenon before, and the appearance was in every way similar to the effect which would be produced by dropping fine dust impregnated with sulphur upon the silver film. The mirrors were uncovered to the sky and in use on August 3 and 4.

Much more complete information relative to the depth of the fall of ash and the area covered will be found in the report referred to above, by Mr. George C. Martin, who spent the summer in the vicinity of the volcano.

Haze and smoke.—The data indicates that a hazy or smoky period set in over British Columbia on June 6 to 8, and in the northwestern part of the United States on June 8 to 10, and continued until June 11 to 12, at the same time gradually extending eastward. A second hazy or smoky period, preceded by volcanic fumes at Sitka, Alaska, on June 15, set in over British Columbia on June 18 to 20, over the northwestern part of the United States on about the same dates, gradually extended eastward and southward, and diminished in intensity before the end of the month, especially in the States west of the Rocky Mountains.

The data also indicate that the haze or smoke may be attributed to three different causes, as follows:

1. The general meteorological conditions, which are usually especially favorable for the formation of haze on the rear of areas of high pressure.

2. Smoke from forest fires. The Chief of the United States Forest Service states that extensive forest fires prevailed in the Yukon Territory, Canada, south of Dawson, during the latter part of May, 1912, in the upper Fraser country, British Columbia, about June 6, and near Golden, British Columbia, between June 11 and 26. There were no reports of serious forest fires in the United States in June, 1912.

3. Smoke or dust from the eruption of Katmai Volcano.

It is impossible to completely separate the effects of these three causes, but it seems evident that the haze and smoke in British Columbia on June 9–10, which in several places was accompanied by sulphur fumes, was at least in part of volcanic origin. The same may be said of the haze and smoke that was particularly pronounced over the States of Washington, Montana, and Wyoming on the same dates, coming as it did at about the same time as the fall of volcanic ash in Washington. The description which follows by Mr. R. Frank Young, in charge of the Weather Bureau office at Helena, Mont., is indicative of the unusual character of the haze:

June 10. A light smoke was noticeable in the upper air by noon, which increased during the day, and almost obscured the disk of the sun for about an hour before sunset, and caused a pronounced red glare in the western sky.

June 11. Light smoke from an unknown cause hung over this vicinity during the day.

June 12. Light smoke not visible in the evening, although the air had a smoky appearance during the forenoon.

The following notes were made by Mr. E. R. Miller, in charge of the Weather Bureau office, Madison, Wis.:

June 8. High haze in the form of streaks, rapidly moving wave systems, and clotted forms observed from 11 a. m., until late in the afternoon. The wave systems of from 3 or 4 to 12 or 15 waves, well spaced and straight, but not more than 8° to 10° from end to end, were moving rapidly from the west, or from west, 10° north.

June 9–10. High haze continued, but became denser, so that definite forms were more difficult to identify. Solar halo observed at 3.30 p. m. of the 10th.

In a letter of later date Mr. Miller states that the haze clouds were unlike anything he had ever seen before, and that his observation was confirmed by several residents of Madison.

On June 8 the Cooperative Observer at Elden, Mo., recorded "Hazy clouds."

The appearance of the haze as described at Madison on June 9 and 10 was much as it appeared at Mount Weather on June 10 and 11, except that no preliminary wave forms were observed at the latter place. This may have been due to the fact that cumulus clouds covered the sky on the afternoon of the 9th, and on the morning of the 10th the haze was already dense.

While the appearance of the haze was such as to occasion discussion among the members of the Mount Weather staff, it was the consensus of opinion that it did not differ materially from the haze frequently observed on the rear of an area of high pressure, except in its unusual density, and it was not until it had persisted practically continuously for some weeks that it was thought necessary to try to connect it with other than meteorological causes.[1]

It may also be said that while there appears to be abundant proof from notes made by observers on their meteorological records that haze of an unusual character overspread the United States during the latter part of June, 1912, only a small percentage of Weather Bureau observers made any mention of it.

Madison, Wis., is about 3,000 miles from Katmai, and the difference in longitude, 66°, is equivalent to about 4½ hours in time. If we suppose the first violent eruption to have occurred at 1.30 p. m., of June 6, the time that elapsed before the haze was observed at Madison was 41 hours; and if the haze was of volcanic origin its rate of translation was about 73 miles per hour. This is no greater than was observed after the eruption of Krakatoa, and does not equal the highest velocities that have been measured by means of balloon ascensions and observations of meteor trails in those high levels to which volcanic dust is raised by violent eruptions.[2]

The volcanic ash that fell in the State of Washington on June 10–13 was either brought in by the slower surface winds (1,450 miles in 90 hours = 16 miles per hour), or else it consisted of the coarser particles that made up the high haze, and which would be the first to reach the ground. The latter seems the more probable assumption, since rain would very quickly clear the lower atmosphere of solid particles of this character, as was observed to be the case at Tatoosh Island on June 12.

That the haze that overspread the United States after June 18 was of much the same character as that of June 8 to 10 is indicated by the following notes by Mr. H. A. Frise, in charge of the Weather Bureau office at Sheridan, Wyo.:

June 19. A thin veil of high cloud has covered the sky all day, giving it a dull-gray color, but not shutting out sunshine.

June 20. The veil of high cloud, while diminishing the brightness of the sun and probably preventing an early record by the recorder, has not interfered with a record for the remainder of the day. The sun at 7 p. m., local time, was easily viewed with the unaided eye, and appeared near the horizon as a large white disk.

June 21. The sun has appeared as a large bright disk not painful to view—in fact, easily viewed by the unaided eye after 7 p. m. No red colors have appeared at the sun or in the region surrounding it. The sky up to 8.30 p. m. in the northwest was white with light entirely free from the reddish tinge so often seen after a windy day.

June 22. The high cloud veil has reduced the sun's brilliancy considerably. The effect in screening the sun's rays is noticeable, but it is quite probable that a large part of the community has not observed the peculiar conditions.

[1] See Bulletin of the Mount Weather Observatory, v. 5, p. 161.
[2] Report of the Krakatoa Committee of the Royal Society, p. 334.

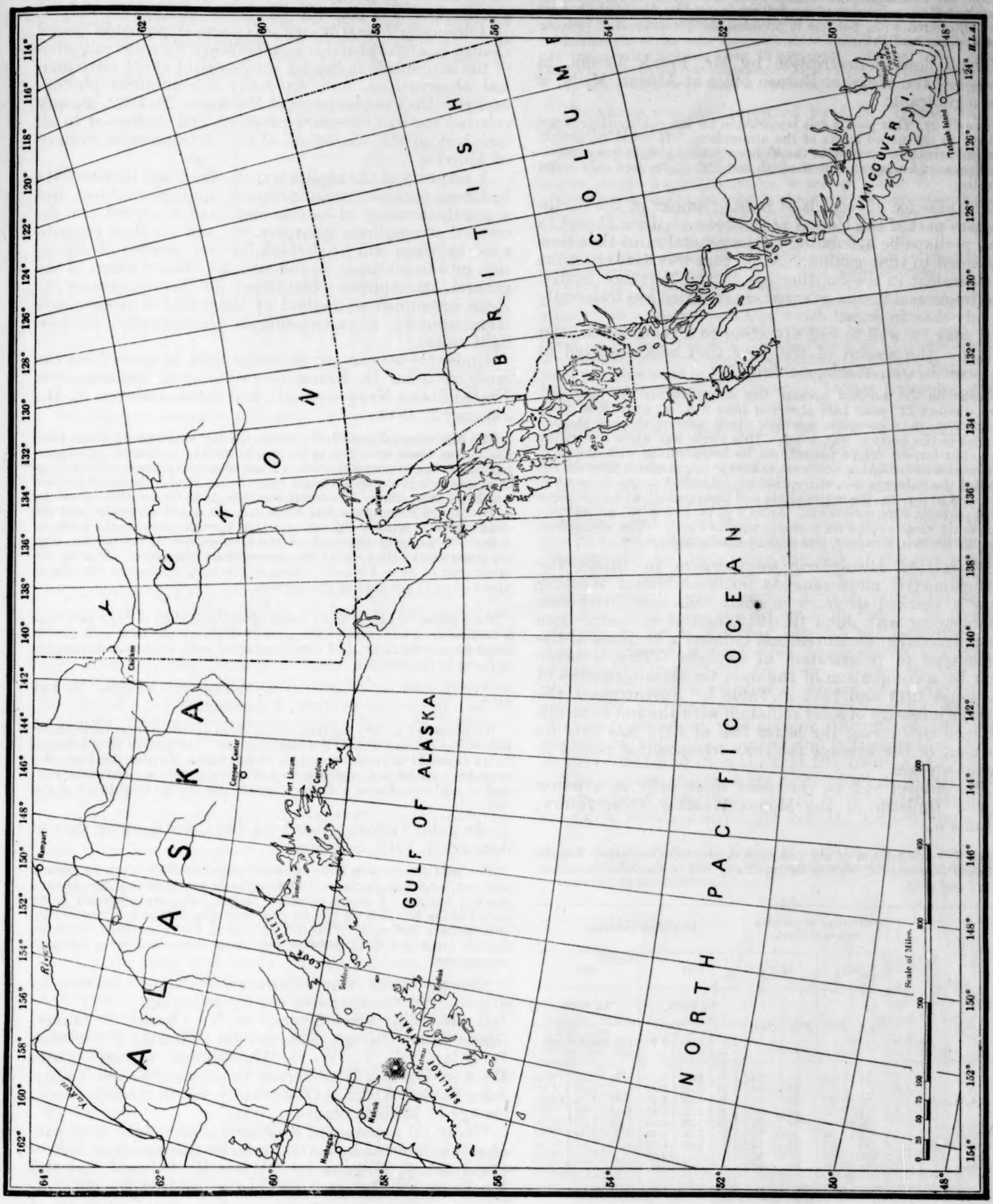

CHART OF ALASKA AND ADJACENT PORTIONS OF BRITISH COLUMBIA, SHOWING EXTENT OF DEPOSITS OF VOLCANIC ASH BY THE ERUPTION OF MOUNT KATMAI ON JUNE 6, 1912.

June 23. The high veil of thin cloud persists, but the sunshine recorder has not refused to give a full day's record. Moonlight has not been interfered with, nor has it revealed the presence of a veil-like cloud, as has sunlight.

The following description by Mr. Frank Jermin, in charge of the Weather Bureau office at Alpena, Mich., is also significant:

June 23–29. This period was remarkable for the continual presence of haze in the upper strata of the atmosphere. It could be plainly seen, and was present only in the higher strata. Also, it was continuously present, except that on the 26th and 27th it was seen only in the morning.

The absence of records of haze or smoke in the northwestern part of the United States between June 11 and 18 may perhaps be attributed to the general rains that then prevailed in that section. At no time was haze or smoke so prevalent in the Southern as in the Northern States, and in general it was everywhere recorded less frequently in July than in June.

It may be well to call attention to a remarkable solar halo for the season of the year that was observed at Tatoosh Island, Wash., on June 17:

Smoke on the horizon became less dense during the afternoon Very distinct 22° solar halo observed from 8 a. m. until 6.30 p. m. About 2 p. m. a complete parhelic circle passing through the sun parallel to the horizon was noted. This circle was white and rather faint, but formed bright parhelia at its intersections with the halo. The maximum brilliancy occurred at 2.30 p. m., at which time the red band of the halo was unusually distinct. About 3 p. m., it began to fade, and at 5 p. m. the white circle had disappeared, although traces of the parhelia were noticeable. From 2 p. m. to 3 p. m. the sky was apparently clear except for a single wisp of cirrus. The atmosphere near the horizon, however, was slightly smoky or hazy.

Diminished atmospheric transparency in 1912.—The pyrheliometric measurements made at Mount Weather show a marked decrease in solar radiation intensities, commencing with June 10, 1912, and at the same time the polarization measurements indicate a decrease in the percentage of polarization of skylight. This is made clear by a comparison of the data for certain months of the years 1911 and 1912 in Table I. Furthermore, the average intensity of solar radiation with the sun at zenith distance 60° during the latter half of 1912 was only 83 per cent of the average for the corresponding period in previous years.

This subject will be discussed more fully in a paper in the Bulletin of the Mount Weather Observatory, volume 5.

TABLE I.—*Comparison of sky polarization and solar radiation data for Mount Weather, Va., during the months of May to December, inclusive, 1911 and 1912.*

Period.	Percentage of polarization of skylight.				Maximum radiation.					
	1911		1912		1911			1912		
					Air mass.			Air mass.		
	Max.	Min.	Max.	Min.	1.0	1.5	2.0	1.0	1.5	2.0
May	66	36	72	34	1.32	1.10	1.06	1.42	1.27	1.19
June 1–9	.....	.....	67	54	1.36	1.22	1.12	1.42	1.36	1.24
June 10–30	72	47	64	14	1.48	1.37	1.27	1.25	1.19	1.05
July	74	31	47	13	1.47	1.37	1.31	1.24	1.05	0.96
August	76	44	41	23	1.39	1.33	1.23	1.08	1.02	0.86
September	75	49	59	35	.....	1.35	1.29	.....	1.14	1.05
October	78	59	51	32	.....	1.47	1.39	.....	1.34	1.24
November	[1] 73	[1] 53	57	43	.....	.....	[1] 1.39	.....	.....	1.24
December	[1] 71	[1] 68	61	39	.....	.....	.....	.....	.....	1.33

[1] Data for the year 1908.

In a recent letter the director of the Meteorological Service of Canada inclosed pyrheliometric readings made at Toronto in 1912. Those for June 10 and 13 showed no evidence of decreased solar radiation intensity, but the decrease was pronounced in the readings for July 1.

Astronomical observations.—It seemed probable that a change in atmospheric transmissibility for solar radiation of the magnitude indicated above would affect astronomical observations, and especially astronomical photography. The circular letter of December 28, 1912, already referred to, was therefore prepared and addressed to all members of the Astronomical and Astrophysical Society of America.

A majority of the replies were to the effect that no data had been obtained bearing directly upon the subject, but a goodly number of astronomers had observed the decreased atmospheric transparency, and the data contributed by them will be divided for convenience of discussion into four classes, as follows: (*a*) Observations of the general atmospheric conditions; (*b*) determinations by some instrumental method of the relative atmospheric transparency; (*c*) astronomical photography; (*d*) twilight colors.

Under (*a*) we can not do better than to quote from the reply of John R. Eastman, professor of mathematics, United States Navy (retired), and dated Andover, N. H., January 3, 1913.

The first unusual peculiarity about the sky was noticed about June 13. When there were few or no clouds the sky presented an appearance that recalled conditions that I had seen many times in New England, occurring from five to eight hours before the beginning of a severe northeast snow-storm. At first it was thought to be the effect of smoke from distant forest fires, but there was no smell of smoke and the density of the opacity did not appear to increase towards the horizon; moreover, the color did not have the faint yellow tint of smoke haze. At times one could look at the sun without discomfort. During the latter part of June I should estimate the transparency of the sky at about 80 or 85 per cent of the normal.

* * * * *

For a period of nearly three weeks after the middle of June there was a noticeable diminution in the growth of nearly all farm and garden crops in this vicinity, and the ripening of such crops was materially delayed in the autumn.

The following is from Mr. Walter S. Adams, Mount Wilson Solar Observatory, Pasadena, Cal.

We observed a very marked diminution in the atmospheric transparency of the sky during the past summer. On certain days I should think it might have amounted to 10 per cent. It took the form of a very hazy white sky, which gave a distinctly yellow color to the sun, and at night produced a distinct diminution in the brightmess of the stars.

Mr. John Tatlock, New York City, writes under date of January 3, 1913, as follows:

The past six months have been abnormal in New York as regards weather, and the decrease in atmospheric transparency has been a marked feature. I began to notice it last July, my attention being called to the fact that we had no clear atmosphere after summer storms, as is usually the case. This fall, as near as I can recollect, we have had no clear and chill October weather accompanied by a brilliant atmosphere.

Among others who report an apparent decrease in atmospheric transparency are the following:

G. W. Hill, West Nyack, N. Y.; Charles P. Oliver, Agnes Scott College, Decatur, Ga.; Garrett P. Serviss, Brooklyn, N. Y.; W. J. Humphreys, United States Weather Bureau, Washington, D. C.; Anne Sewell Young, John Payson Williston Observatory, South Hadley, Mass.; George E. Mellish, Madison, Wis.

Under (*b*) evidence of decreased atmospheric transparency is submitted by two independent observers at Yerkes Observatory, Williams Bay, Wis.—Mr. Oliver J. Lee and Mr. Frederick Slocum. Mr. Lee writes that the observations submitted by him are based on visual estimates of the transparency, *1* representing the lower limit for spectrographic work and *5* representing a brilliant transparent night. The estimates were made a half dozen times or

more each night when work could be done, which averaged 7.3 nights per month. He further states that all observers using the Bruce spectrograph during the past summer noted that exposure times had to be lengthened. The observers besides Mr. Lee were Prof. E. B. Frost, Mr. S. B. Barrett, and Prof. S. A. Mitchell.

TABLE 2.—*Monthly averages of atmospheric transparency as estimated at the Yerkes Observatory, Williams Bay, Wis.*

Month.	1910		1911		1912		$\frac{1910+1911}{2}-1912$	
	Lee.	Slocum.	Lee.	Slocum.	Lee.	Slocum.	Lee.	Slocum.
January	2.7	.....	2.8	.....	3.3	.....	−0.5	.....
February	2.1	.....	3.2	.....	3.3	.....	−0.7	.....
March	2.5	.....	2.7	.....	2.8	.....	−0.2	.....
April	2.3	2.4	2.8	2.6	2.7	2.2	−0.1	+0.3
May	2.4	2.7	2.4	2.5	2.2	2.2	+0.2	+0.4
June	2.3	2.3	2.2	2.9	2.0	2.1	+0.2	+0.5
July	2.7	2.8	2.4	2.6	1.6	2.1	+1.0	+0.6
August	2.0	2.3	3.0	2.8	1.6	2.2	+0.9	+0.4
September	2.4	2.6	2.8	2.9	2.5	2.0	+0.1	+0.8
October	2.8	2.5	2.4	2.75	2.6	2.4	±0.0	+0.2
November	3.6	.....	2.3	.....	2.2	.....	+0.8	.....
December	3.0	.....	2.7	.....	2.3	.....	+0.5	.....
Averages	2.57	2.51	2.64	2.72	2.42	2.17	+0.18	+0.45

Mr. Slocum writes as follows:

It has been my custom to estimate the transparency of the atmosphere at the time of each observation. This estimate was made by occulting the sun with the edge of the opening in the dome and noting the "milkiness" of the sky near the sun. If the sky were perfectly clear and blue right up to the edge of the sun, the transparency was recorded as 5. If, on the other hand, the sky were dull and the sun so weak that it was only just possible to make a photograph of it with the spectroheliograph, the transparency was called 1. From April to October I observe the sun on from 15 to 20 days per month.

The data in Table 2 are the monthly means of the transparency as estimated by the above two methods. It will be noted that both methods give decreased transparency in the latter part of 1912 as compared with corresponding months in 1910 and 1911, but they do not agree as to the month in which this decrease first became pronounced.

Similar results were obtained by Martin S. Brennan, St. Louis, Mo., in using a 6-inch refractor for examining sun spots, and particularly in viewing the binary star (61 Cygni) in the Swan, who estimated the decrease in transparency at about 10 per cent; by John T. Hedrick, S. J., at Georgetown College Observatory, Washington, D. C., who has been determining the brightness of variable stars by comparing them with neighboring stars, and who estimates the loss at 20 per cent; by Prof. Philip Fox, Dearborn Observatory, Evanston, Ill., who noted the general whiteness of the sky, the excessive faintness of stars of the lower magnitude, and the failure to observe nebulæ; and by Messrs. Abbot and Fowle in Algeria and California, whose spectro-bolometric measurements, as well as visual observations, showed a marked decrease in atmospheric transmissibility, first noted in Algeria on June 19, and at Mount Wilson, Cal., on June 21, and who estimate the decrease in solar radiation intensities at 20 per cent.

On the other hand, several observers have found that the "seeing" in the latter part of 1912 has been up to the average.

Under (*c*) we quote the following:

We are photographing through a 24-inch objective for stellar parallax, and have noted that the time of our exposure seemed to be increased.—JOHN A. MILLER, Swathmore College, Pa.

My observations were in connection with photographs of nebulæ and comets. July 10 and July 16 were the first photographs since April and magnitudes were fainter by ½ to 1 mag.

No other photographs were taken until October 3. From that time to November 6 the sky was below normal of transparency (18 nights). From November 6 to January 1 average transparency.—F. P. LEAVENWORTH, University of Minnesota.

Photographs of the solar spectrum show a marked decrease in intensity (apparently not less than 25 per cent). General haze, July to October, prevented observations. First noticed about July 1.—W. F. KING, director Dominion Observatory, Ottawa, Canada.

The above was also reported by J. S. Plaskett, of the same observatory.

The astronomical photographs have been very unsatisfactory this fall. I can not decide how much is atmospheric and how much due to slow plates.—JOEL H. METCALF, Worcester, Mass.

There was a marked decrease in atmospheric transparency throughout the summer. My observations at Yerkes are photographic, and the decreased transparency was very noticeable in the exposure time necessary.—Prof. S. A. MITCHELL, Williams Bay, Wis.

We detected a change in color of direct sunlight by spectrophotometric comparison with acetylene. First noted on June 11.—P. G. NUTTING, Bureau of Standards, Washington, D. C.

We have been making astronomical photographs for some years, mainly with a Cooke 5-inch lens, which has usually given us very large numbers of faint stars with exposures ranging from one to four hours. After June 1 most of this was carried on by students and by my associate, Mr. Drew, and I was continually disappointed that the usual exposures failed to show anything like the number of stars we had been getting before.—W. A. COGSHALL, Indiana University, Bloomington, Ind.

The data included under (*d*) will be considered in connection with other twilight observations.

Marvin sunshine recorder records.—The records from this well-known instrument require a correction for the time just after sunrise and just before sunset when the solar radiation is too weak to cause a record to be made. Instructions require that the adjustment be such that a record will be made when the disk of the sun can just be faintly seen through the clouds. Unfortunately, this necessarily leaves much to the judgment of the observer; and since the adjustment has to be changed with the season of the year, one can not be certain that the adjustment is such that the records are strictly comparable from year to year. However, the data given in Table 3 show that at 11 out of 15 stations the correction on clear days for early morning and late afternoon sunshine was greater during the last seven months of 1912 than during the corresponding months of 1911, or than during the first five months of 1912.

The stations selected are none of them in large cities where smoky conditions are to be expected, and they are fairly evenly distributed over the United States.

TABLE 3.—*Average time in hours and tenths that the sun's rays on clear days failed to affect the sunshine recorder immediately after sunrise and immediately before sunset.*

1911.

Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Amarillo, Tex.	0.2	0.3	0.3	0.4	0.7	0.5	0.7	0.7	0.6	0.4	0.2	0.3	....
Baker, Oreg.	....	....	0.9	1.2	1.2	1.3	0.9	0.6	0.5	0.6	0.7	0.7	....
Devils Lake, N. Dak.	1.1	1.0	1.0	1.0	1.5	1.7	1.5	1.6	1.4	1.1	1.0	0.8	....
Dodge City, Kans.	0.8	0.4	0.3	0.2	1.1	1.0	0.4	0.6	0.6	0.9	0.8	0.8	....
Fresno, Cal.	1.0	1.1	1.1	1.3	1.6	1.3	1.0	1.1	1.2	1.4	1.0	1.1	....
Jacksonville, Fla.	1.0	1.2	1.2	0.9	1.4	1.6	1.1	0.8	1.0	1.0	1.0	0.9	....
Lansing, Mich.	0.9	1.0	0.8	0.9	1.2	0.9	0.9	0.8	0.8	1.3	1.0	0.8	....
Lexington, Ky.	1.2	1.0	1.2	1.4	1.8	2.3	2.1	1.8	1.8	1.8	1.1	1.3	....
Madison, Wis.	1.1	1.0	1.2	1.5	1.5	1.3	1.3	1.4	1.6	1.1	0.9	1.3	....
Modena, Utah	1.5	1.3	1.7	1.8	1.8	1.6	1.6	1.4	1.3	1.2	1.3	1.5	....
Mount Weather, Va.	0.4	0.4	0.8	0.7	0.7	1.0	1.2	1.1	1.1	0.9	0.9	0.9	....
Northfield, Vt.	0.9	0.9	1.0	1.1	1.3	1.3	1.4	1.3	1.0	1.3	0.9	1.1	....
North Platte, Nebr.	0.6	0.7	0.7	0.8	1.1	1.0	1.2	1.3	1.0	1.5	0.9	1.2	....
Yellowstone Park, Wyo.	0.9	1.0	1.0	1.2	1.3	1.2	1.2	1.1	1.0	0.9	0.9	0.9	....
Yuma, Ariz.	0.4	0.5	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.4	0.4	....
Mean	0.9	0.8	0.9	1.0	1.3	1.2	1.1	1.1	1.0	1.0	0.9	0.9	1.0

Average, January to May, inclusive, 1.0; average, June to December, inclusive, 1.0.

TABLE 3.—*Average time in hours and tenths that the sun's rays on clear days failed to affect the sunshine recorder immediately after sunrise and immediately before sunset*—Continued.

1912.

Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Amarillo, Tex.	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.4	0.3	0.4	0.4	....
Baker, Oreg.	0.9	1.1	0.9	0.9	1.5	1.9	2.1	0.8	0.9	0.9	0.7	0.8	....
Devils Lake, N. Dak.	0.9	1.3	1.5	1.4	1.5	1.9	2.4	2.4	1.9	1.2	1.2	1.3	....
Dodge City, Kans.	0.8	1.0	1.4	1.4	0.7	0.5	0.6	0.4	0.5	0.5	0.7	0.7	....
Fresno, Cal.	0.9	1.2	1.2	1.3	1.3	1.3	1.4	1.1	1.1	1.3	1.3	1.3	....
Jacksonville, Fla.	1.1	1.2	1.3	1.6	1.8	1.6	1.5	1.8	1.6	1.6	1.0	1.2	....
Lansing, Mich.	0.6	0.8	0.8	0.7	0.7	0.9	1.7	1.8	1.3	1.4	1.8	1.4	....
Lexington, Ky.	1.4	1.4	1.4	1.1	1.3	1.3	1.3	1.3	1.2	1.2	1.6	1.7	....
Madison, Wis.	1.0	1.1	1.2	1.5	1.9	3.0	2.5	1.9	1.6	1.4	2.3	2.0	....
Modena, Utah.	1.5	1.5	1.6	1.7	1.8	1.7	1.9	1.8	2.0	0.9	0.8	0.8	....
Mount Weather, Va.	1.0	1.0	1.3	1.6	2.2	2.4	2.4	2.6	2.4	1.7	1.1	1.3	....
Northfield, Vt.	0.9	1.0	0.9	1.0	1.0	1.2	1.5	1.2	1.2	1.3	1.3	0.9	....
North Platte, Nebr.	1.3	0.9	1.2	1.7	1.5	1.4	1.2	1.3	1.4	1.3	1.6	1.3	....
Yellowstone Park, Wyo.	0.9	1.0	1.0	1.1	1.4	1.3	1.5	1.6	1.5	1.2	1.3	1.4	....
Yuma, Ariz.	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.5	0.6	0.6	0.5	0.6	....
Mean.	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.4	1.3	1.1	1.2	1.1	1.2

Average, January to May, inclusive, 1.1; average, June to December, inclusive, 1.3.

Observations of twilight colors.—Careful observations of the color of the sky at about sunrise and sunset were made by the writer not only at Mount Weather, Va., during the summer, but also while on a visit to New Hampshire in September and on a western trip that included stops in Nebraska, Colorado, and New Mexico, in October and November, 1912. No twilight colors of unusual brilliancy were observed until the evening of October 13. Just after leaving Lincoln, Nebr., on a westbound train, it was noticed that the western sky was unusually red, and the following entry was made in my notebook:

> After getting out of the city smoke the western sky was seen to have a brownish red color to a height of about 8°. There was a suspicion of a pink glow above this, but it did not last long. The red band grew narrower, and had disappeared by 6.30 p. m., central time.

On the morning of October 15 the Rocky Mountains were crossed through La Veta Pass in southern Colorado. The summit was reached just before dawn, and it was noted that the eastern sky was very red.

After reaching Santa Fe, N. Mex., on the evening of the same day, it was noted that whenever the sky was clear the twilight colors were brilliant, both morning and evening. Red shades predominated, but a purple or rose-colored glow that came on shortly after sunset was a feature. Usually, also, the sky near the place of sunrise or sunset was decidedly streaked, the bands appearing to lie horizontally. They lacked the fibrous appearance of cirrus clouds.

Upon my return to Mount Weather on November 11, 1912, my attention was at once attracted to the unusual brilliancy of the twilight colors both morning and evening, the red shades predominating, although the purple glow was frequently present. Upon inquiry of the Mount Weather staff it was learned that these brilliant colors had first been noticed about October 23.

The circular letter of December 7, 1912, was at once prepared and sent to officials in charge of Weather Bureau stations. Before it could be mailed, however, the central office was informed that Prof. A. G. McAdie, in charge of the Weather Bureau office at San Francisco, Cal., had sent out a similar letter to Weather Bureau observers on the Pacific coast, his attention having also been attracted to the unusually brilliant twilight colors. This action on the part of Prof. McAdie, as well as the extracts that follow from replies to circular letter of December 28 (*d*, under the classification of Astronomical Observations), confirms my own conclusion that the twilight colors during the fall months of 1912 were unusually brilliant.

EXTRACTS FROM REPLIES TO CIRCULAR LETTER OF DECEMBER 28, 1912.

Repeated note has been made of an unusual redness in the morning and evening twilight. Exact dates can not be given, but it was noticed as most conspicuous about the early part of September, continuing with decreasing intensity on into November. The records do not show that this was continuous, or that there were no intervening evenings when it was not seen; but my impression is that for a short time it was continuous.—A. THOS. G. APPLE, director Daniel Scholl Observatory, Lancaster, Pa.

One thing quite noticeable to all of us who have occasion to work at Mount Wilson was the red glow in the morning and evening sky at about the time of sunrise and sunset. It certainly was quite out of the ordinary, and we have wondered if it could have been connected with the Alaska eruption that occurred early in the summer.—F. H. SEARES, Mount Wilson Solar Observatory, Pasadena, Cal.

We have noticed that the sunsets were frequently moderately red, and we suspected that this slight redness was due to the dust particles projected into the atmosphere by the Alaskan volcanic eruption of last summer.—W. W. CAMPBELL, director Lick Observatory, Mount Hamilton, Cal.

The western sky during the early days of January [1913] was often decidedly red at sunset over a wide horizontal arc, decidedly in excess of the color ordinarily noted here.—R. H. TUCKER, Lick Observatory, Mount Hamilton, Cal.

A few mornings in October, 1912, I noticed the following somewhat unusual phenomenon: About three-fourths of an hour before sunrise there was a strong pinkish glow over nearly all the eastern half of the sky. It was particularly strong at 60° to 80° altitude—that is, high in the sky—and of quite a different appearance from the ordinary sunrise glow, besides occurring long before sunrise. There were few if any clouds, and no haze of ordinary varieties.—PAUL W. MERRILL, Lick Observatory, Mount Hamilton, Cal.

At night I have seen after sunset a ruddy glow somewhat similar to that following the Krakatoa explosion, but fainter, and which in conversation with others I have suggested might be due to the eruption in Alaska.—R. W. PRENTISS, professor of mathematics and astronomy, Rutgers College, New Brunswick, N. J.

At a few Weather Bureau stations it was noted from time to time during June, July, August, and September, 1912, that the twilight colors were unusually red. During October brilliant twilight colors were noted more frequently, and at a greater number of stations, and the climax in both brilliancy and frequency appears to have been reached in November. At only a comparatively small number of stations, however, was any note made of the twilight colors.

The following are quotations from a few of the more characteristic descriptions:

Yankton, N. Dak., June 23, 1912: Very red sunset.

The Dalles, Oreg., June 24, 1912: Brilliant red sky at sunrise.

Charleston, S. C., October 6, 1912: Western sky very red after sunset because of haze.

San Francisco, Cal., November, 1912: In general, the colors did not extend more than 15° north or south from where the sun set, and there appeared to be no difference in the two sides; possibly on the north side the color was more intense. The height of the colored region seldom exceded 10°. The point which struck me most in these observations was that the red color appeared to reach its maximum, not at the time of sunset, but 18 or 20 minutes afterwards.

Point Reyes Light, Cal., November, 1912: The sunsets reached a climax of brilliancy on the 20th, and there was a strong greenish glow for some time after sunset. As the sun descends close to the horizon the lower atmosphere takes on a smoky appearance. The coloring does not appear until a few minutes after the sun has set. Then there is a deep red on the horizon and to a height of about 12°, where it shades off into a greenish yellow, the extreme limit of which is about 25° in altitude. The colors extend about 40° north and south of the sun.

Sacramento, Cal.: During November, 1912, the sky in the west has been a lurid red, as if there were a destructive fire in progress. The area occupied by the light at sunset was about 25° altitude and 60° azimuth. At sunrise, in the east, it was probably about 15° and 40°, respectively. Less brilliant at the end of the month.

Fresno, Cal.: No unusual phenomenon of this character was observed until after November 10, 1912. On this date a very good general rain occurred and cleared the atmosphere of the dust, which gives it a very hazy appearance during the dry season. During the remainder of November a number of very beautiful sunsets were observed, which differed from the usual phenomenon in that the brilliant colorings were more widely and more evenly diffused than is common. Approximately 120° of the western horizon was colored, the hues reaching well toward the zenith and continuing with a brilliance more or less noticeable for fully an hour after sunset. The duration was an especial feature of the phenomenon. The reds were most conspicuous, but other colors in that portion of the spectrum, the yellows and oranges, which appeared first in order, were not much less so.

Santa Fe, N. Mex., December 29, 1912: The sunset glow this evening was especially brilliant. By 5.10 p. m. the entire western sky was rosy from 110° north to 90° south of the sunset point, and upward fully 65°. By 5.20 p. m. the colors had become brilliant red about the sunset point, shading off to a beautiful rosy red in the distance. By 5.30 p. m. the lower colors had become dark red and very brilliant. Thereafter the colors faded rapidly, and the last glow was seen at 6.10 p. m.

In the following letter, which is a reply to circular letter of December 28, 1912, attention is called to the well-known fact that brilliant twilight colors are only observed under favorable meteorological conditions:

During the summer of 1911 I spent from June 12 until September 1 in Prince Edward Island, Canada. Almost the entire summer there were brilliant pink sunsets that were very similar to those in the autumn of 1883. Previous experience in that region shows that brilliant afterglow sunsets may be expected in summer.

In 1912, from June 5 until September 7, I saw no afterglow that was brilliant, and only a few that were slightly reddish. The weather was unusually damp for the region all summer.

It would appear that the amount of moisture must have had some relation to the absence of the afterglow of the sunsets in 1912 in the above region.—Prof. C. C. TROWBRIDGE, Department of Physics, Columbia University, New York City.

There seems to be good evidence that unusually brilliant red sunsets were observed in the United States during the fall of 1912, and especially in November, and in the drier sections of the country, where conditions were especially favorable for such observations. It does not appear that the twilight colors have been markedly different from those of other years except for an increase in intensity, and in some cases an increase in duration. While the purple or rose-colored glow that has been observed to overspread the sky a short time after sunset or previous to sunrise has been a prominent feature of the displays, it has not been comparable with the afterglows observed in 1883.[1]

Atmospheric turbidity in Europe in 1912.—The reader is referred to the scientific journals[2] for details of the many observations that indicate decreased atmospheric transparency in Europe during the latter part of 1912. Nearly all the writers fix the date of the first appearance of the haze between June 20 and 27; Dr. L. Steiner, however, finds evidence of unusually hazy conditions as early as May, 1912, which were intermittent in character and appeared to be connected with anticyclonic weather conditions. The intensity of the haze appeared to increase with each recurrence, until a maximum was attained in July.

In his reply to circular letter of December 28, 1912, Dr. Adolf Hnatek, of the Vienna Astronomical Observatory, places the first appearance of the haze previous to June 12. He states that since two photographic-photometric exposures on the constellation Coma Berenices, one on June 12, of 80 minutes, and the other on June 19, of 90 minutes, failed to show stars revealed by an exposure of an hour on June 3, the disturbance in the atmosphere may have had its commencement between June 6 and 12. He estimated the decrease in atmospheric transmissibility at from 10 to 15 per cent.

Observations from high Alpine peaks and from balloons indicate that the haze was confined to great heights. It seems to have diminished greatly by November, 1912, although some observers saw evidence of it at the end of the year.

Summary.—The eruption of Katmai Volcano, on June 6, 1912, was followed by a fall of volcanic ash over all of southeastern Alaska and southward into the State of Washington.

A hazy or smoky condition of the atmosphere that was first observed in the United States from June 8 to 10, but apparently did not reach its maximum intensity until June 20 to 25, was also observed in Europe and in northern Africa. In Europe it was not generally observed until after June 20, although there is evidence that it may have been present previous to June 12. In Algeria, northern Africa, there is evidence that it was present as early as June 19.

Astronomical observations, and especially astronomical photography, together with pyrheliometric measurements and records from sunshine recorders, indicate that the haze caused a marked decrease in atmospheric transparency.

Twilight colors in the United States during the fall of 1912 were more brilliant than usual and perhaps also of greater duration. The red shades were especially pronounced.

At the end of 1912 the haziness appeared to be decreasing.

MOUNTAIN SNOWFALL MEASUREMENTS.

By BENJAMIN C. KADEL, Local Forecaster, Weather Bureau.

As the irrigation systems of the country increase, the need of more accurate measurements of the water supply from the mountain snow fields becomes greater. An experience of two years' actual work in the snow fields of a portion of the Rio Grande National Forest in Mineral County, Colo., at elevations exceeding 9,000 feet, has demonstrated that the problem is not so complicated as it may appear to the casual visitor to the mountains. The apparent confusion in the distribution of the snow layer, here the bare hillside, there the deep even layer of the forest, and beyond the great timber line drifts, is, upon closer acquaintance, found to be the result of natural causes, the most important of which is the angle the slope, on which the snow lies, makes with the sun. In the high regions of the mountains the sun shines for a greater number of hours during the winter than at lower elevations because the sky is less frequently obscured by cloud, and the sun's rays are also stronger, because they

[1] The eruption of Krakatoa and subsequent phenomena. Report of the Krakatoa committee of the Royal Society, p. 340, and frontispiece.

[2] *Wolf, M.* Trübung der Atmosphäre und Dämmerungserscheinungen. Met. Zeit., July, 1912, Bd. 29, p. 339.
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Steiner, Dr. L. Zur atmosphärischen Trübung im Sommer 1912. Met. Zeit., Jan., 1913, Bd. 30, p. 36.
Shaw, W. N. Peculiar appearance of the sky during the summer, 1912. Qr. J. R. Met. Soc., Oct., 1912, v. 38, p. 312.
Jensen, Dr. Chr. Über die grosse atmosphärisch-optische Störung von 1912. Reprint from Mitteil. d. Vereinig. v. Freunden d. Astron. u. kosm. Physik, Berlin.

shine through a rarer atmosphere. Actual measurements show that on south slopes the main body of the snow generally melts within a few days after it falls, even though thermometers exposed a few feet above the ground show temperatures well below the freezing point. From the fact that the main body of the snow that falls on south slopes disappears time and again during the course of a winter, while at the same time the mountain streams continue at low stage, it seems reasonable to conclude that the greater portion of the snow that falls on these slopes is evaporated, and hence is of little importance in maintaining the summer water supply. It is therefore useless to place any measuring devices on south slopes, because such measurements are of temporary conditions that will have little or no relation to the spring water supply. In striking contrast, snow lying on north slopes shows little or no melting until the advent of the higher temperatures of April, and even then the north slope snow first melts into itself, without important loss of water value. Another important fact is that snow does not drift on timbered north slopes, and there is but little loss by evaporation on these slopes. Actual measurements have shown that the water value of the snow on the ground on north slopes in the spring may be as much as 20 per cent greater than the total catch of the winter in gages so located that they are practically shielded gages. Since we have the accumulated snows of the winter available for measurement at any time before the spring thaw, such apparatus as gages, bins, and other devices for catching the snow as it falls are not only useless but misleading, first because of their well known failure to make a correct catch, and second because they hold their contained snow up to the action of sun and wind, thus accelerating the evaporation of their contents. Since it has been demonstrated that the entire accumulation of the winter's snowfall may frequently remain on the north slopes, then it follows that we have in these slopes the key to the problem. At the same time the snow lying on east and west slopes, which may enter the earlier spring flood, and also the quantity of snow above timber line must bear a close relation to that on the north slopes from year to year. When the area under study is limited in extent, it is possible to make a good working estimate of the total water value of the snow on the entire area by measuring each representative slope separately, and then combining the results by weighting each measurement according to the area it represents. It is obviously erroneous to use an average of a number of measurements for any purpose, unless all were made on slopes of practically the same degree of angle and orientation. To make a detailed snow survey of large areas generally involves a better knowledge of the contour of the field than ordinary maps afford, and it is probably better to confine the work to the north slopes, and to base estimates of water supply on a comparison of the year under consideration with previous years.

The best place for making measurements is on a north slope of about 20° in an open space in a stand of timber. A slight variation from north will have but little effect, though a northeasterly slope is better than a northwesterly one, but in general the slope should be as near to true north as possible. The ideal timber location is in small hardwood, such as aspen, whose trunks are close enough to prevent drifts, and whose crowns are insignificant, while nearness to large coniferous trees should be avoided. Surroundings should also be considered, since open parks of great extent may be responsible for large accretions of snow, particularly near the timber line. Such locations are to be avoided.

In order to measure the water value of a given snow layer it is required to know both the depth and the density of the layer. The accepted method of measuring the depth is by means of snow scales, permanently fixed, from which the depth may be read at any time. The scale should be as small in cross section as practicable, so as to reduce reflected heat and consequent melting of the snow immediately about it, and at the same time it must be large enough for graduations that may be read at some distance, say 25 feet or more. It has been found satisfactory in practice to use a vertical staff, 1¾ inches square and 10 feet long, secured in a vertical position. The staff is first painted white, after which the graduations are painted on with a quick-drying black paint, the foot numbers on one face, and the tenths of feet on the adjacent face, the tenths being made recognizable by wide triangles at the foot marks, narrow triangles at the half-foot, and triangles that reach only half across the staff at the intermediate tenths. A scale so graduated may be read at 200 feet with the aid of a small field glass. The increased legibility gained by graduating the scale in feet and tenths more than repays the work involved in translating the readings in to inches, since it permits the observer to make the readings without disturbing the snow near the scale, and also allows scales to be located at points inaccessible on snowshoes, but within reading distance of some accessible point. The scale may be set up by first nailing the zero end of the staff into a halved-out block of wood, then setting the whole into the ground to bring the zero to the ground surface, then securing by guy wires to stakes or other rigid supports.

The density of the snow layer has been measured by means of tubes of small bore, with the lower rim filed into saw teeth, which in actual practice are either thrust down through the snow layer to the ground, or in some cases rotated as they descend. The tube is then withdrawn and the snow found in it is considered a representative sample of the layer. In actual practice it is frequently found that when, under extremely dry, cold conditions, it is possible to cut out a correct sample; the snow core will drop from the tube as it is withdrawn, while snow that is moist enough to resist dropping out of the tube will also resist entering the tube; therefore a correct sample can not always be obtained. The upper layers of snow are tough and matted together, while from a point several inches below the surface downward to the ground it is dry and granular. The top layer frequently forms into a conical stopper that effectively pushes the dry, granular lower layers aside as the tube proceeds downward. This action may easily be determined by comparing the height of the snow inside the tube with the height outside. In narrow-bore tubes it will be found that the snow is much lower in the tube than the surrounding layer, while if a section be bounded by a larger tube, say a 6-inch stovepipe, the snow within the tube will remain almost as high as outside. The decided advantage thus gained has led to the use of tubes 5.94 inches in diameter, so chosen to make 1 pound of snow equal to 1 inch of water in the tube for convenience in making the computations. Such tubes can be made at any tin shop. The seam should be drawn and riveted with small rivets. Sixteen-gauge iron is necessary to give the strength required for the dense upper layers in late spring. The tube may be made in sections, and joined by a notched collar, so as to be available for various depths. After the tube has been inserted through the snow layer, an auger, whose diameter is a little less than the tube, is screwed down through the imprisoned snow, a cross pin 8 inches long through a hole in the handle at the upper rim of the tube serving to prevent

the auger from boring into the ground, and also supporting the weight of the contained snow when the tube is withdrawn. The auger may be made by attaching a circular piece of 16-gauge iron to a wood handle with corner braces, then cutting on the diameter from opposite sides to the handle, and finally bending the edges of the cut to the desired shape. The snow sample may then be emptied into a light-weight receptacle—a 5-gallon oil can serves well—and weighed. Spring balances sold under the trade name "Dairy Scales," which are graduated in pounds and tenths on a dial, and have a capacity of 24 pounds, are suitable for this purpose and may be purchased almost anywhere. When the matted upper layer of snow is of considerable depth, as occurs under the bright sunshine of March and April, it is necessary to take out a few inches at a time, and reinsert the tube in the same hole until the granular layer is reached. The tough upper-layer snow will stick in the tube so that it may be removed without the support of the auger. If not taken out a little at a time it will clog even the large tube. The observer will learn by practice how best to meet this condition, although to pass from the tough upper layer to the dry granular snow remains the weak point in the problem of bounding a section of the snow layer.

The net weight of the sample in pounds gives the water equivalent in inches, but since density measurements must be made at right angles to the ground to prevent the escape of snow through the lower end of the tube when the auger is screwed down, it is best to compute the density from the weight and depth, and apply the factor thus determined to the vertical scale readings. Since the measurements used in surveys are horizontal, it is best to use the vertical values. For example, if the depth at right angles to the ground is 26 inches, and the weight of the sample in the 5.94-inch tube is 5.2 pounds, then the density is $5.2 \div 26 = 20$ per cent; and if the vertical depth as read from the snow scale is 30 inches, then the water equivalent of the snow layer is 20 per cent of 30 inches, or 6 inches. This value, multiplied by the area of the slope as scaled from a map, will give the cubic water content of the slope.

The density measurements should be made at some distance from the scale so that conditions at that point may not be disturbed. It is well to select the place for the density measurements before the first snow, clear the ground, and stretch a wire across for a marker. A rag fastened to the wire with a clothespin serves to mark the place at which the snow has been disturbed, so that subsequent measurements may be made at a different place even though a new snow may have fallen.

The methods and apparatus here described are the result of actual experience with snow up to 5 feet depth. The appliances can be readily secured almost anywhere, and while the values found by their use are far from refined, yet in the region where they have been used they furnish a reliable working basis for both comparative and quantitative measurements. The weight of the large tube unfortunately renders it difficult to carry about, but the cost is small enough to permit an equipment at each measuring station. In the hands of expert toolmakers, the appliances could no doubt be greatly refined.

INTERESTING SOLAR HALO.

By FREDERICK SLOCUM, Assistant at the Yerkes Observatory, Williams Bay, Wis.

Between noon and 1 p. m. (central standard time) May 19, 1910, solar halos were observed and also streaks and patches of brilliant colors, some resembling fragments of a rainbow and others isolated patches of approximately monochromatic colors, rose, pink, green, blue, etc., while some showed iridescent or iris effects. These appeared in the south at an altitude of 15° to 20°.

At the time, great masses of cumulus clouds were slowly drifting from the west. Back of the cumulus were brush-like formations of cirrus. The colors were sometimes projected on the cirrus, and sometimes on what was apparently clear sky. A photograph taken at 12 hours and 10 minutes, central standard time, looking directly south from the roof of the observatory with a 4″ x 5″ camera, a color filter and an isochromatic plate, shows the cloud formation, also a horizontal streak where a strip of rainbow colors occurred, and also a brilliant patch of iridescent or iris cloud. The above phenomenon was observed by eight others of the observatory staff and the writer (i. e., Messrs. Frost, Burnham, Barnard, Parkhurst, Barrett, Lee, Mitchell, and Slocum), no one of whom had before seen similar effects.

NOTE.—Those were the days when Halley's comet was being anxiously expected to pass near the earth, and the sky was being carefully scrutinized owing to the possibility that some unusual terrestrial phenomenon might occur. As a result of this careful scrutiny it is generally believed that nothing unusual occurred in the atmosphere of the earth, and we must therefore consider the patches and streaks of brilliant colors seen at Williams Bay to be fragments of ordinary solar halos due to the presence of ice crystals or snow in the cirrus formations back of and higher than the cumulus clouds. A complete description of all forms of halos is given in the Meteorologische Optike of Pernter and Exner, published at Vienna during the years 1902–1910, in memory of the first 50 years of activity of the K. K. Central Institute for Meteorology and Terrestrial Magnetism. The colored patches observed by Mr. Slocum seem to correspond closely with the location of the circular halo of about 22° radius that surrounds the sun, and is due to the presence of small prismatic crystals of ice. On page 312, Pernter says the parhelion of 22° distance from the sun is explained by the direct passage of solar rays through vertical ice prisms whose refracting angle is 60°, and whose refracting edges are perpendicular to the observer's horizon as they float in the atmosphere. On page 320, Pernter says the parhelion, therefore, differs from the halo of 20° in the fact that the latter being a closed ring around the sun is due to such prisms of ice as have every possible orientation . . . The measurements of the distance of the ring from the sun confirms this conclusion to the minutest details.

METEOROLOGY IN THE FAR EAST.

(Extract from the Scientific American of February 15, 1913.)

At the suggestion of Prof. Nakamura, in charge of the meteorological service of Japan, there will soon be held a meeting of the directors of meteorological observatories in the Far East, the first assembly of its kind. Practical meteorology has made great progress in that part of the world in recent years. Notable steps have been the extension of the Philippine Weather Bureau to outlying islands favorably situated for keeping track of typhoons; the organization of a complete meteorological service in Indo-China; the establishment of a telegraphic weather service along the whole China coast, and to a rapidly growing extent, in the interior of China, under the Zikawei Observatory, at Shanghai; the creation by the Germans of a local service for Kiao-chau, with headquarters at Tsingtao; and the organization of an excellent service in Korea,

under Japanese auspices. It is understood that China intends to establish a national weather service, with headquarters at Peking, but no details of this plan are yet known. P. C. D.

TO OBSERVERS OF METEORS.

Shooting stars, meteors, bolides, and aerolites are but different names for large and small bits of matter that enter the earth's atmosphere and are frequently burned up in it, but occasionally they pass through it, going onward in space, while at other times they burst in pieces and fall to the earth. The largest aerolite known is the great mass of iron weighing 36 or 37 tons that was brought from Greenland to New York City by Peary, and is now deposited at the entrance to the American Museum of Natural History in that city. Observation of these bodies has some interest to astronomers, but an especial interest to meteorologists. The combination of several accurate observations of positions as seen from as many different stations enables an expert to calculate the precise path of the aerolite through the atmosphere. From this we detemine at once the altitude above the earth's surface at which there is sufficient air to heat the meteor to visibility. We can also calculate the resistance of the atmosphere at that elevation whence there results some knowledge of its density. There are numerous other important questions to be answered, and such observations may give us a clue as to the condition of the highest portion of our atmosphere. Doubtless the time will come when observations of bright shooting stars will be expected of every meteorological observer, but at present they are recorded by the few enthusiasts devoted to research in untrodden fields.

We are therefore pleased to know that Prof. Charles P. Olivier, of Agnes Scott College, Decatur, Ga., has taken up this class of work, in which Prof. H. A. Newton of Yale College won such distinction and aroused both astronomers and meteorologists to realize their great importance. Prof. Olivier has in fact organized "The American Meteor Society," "having become convinced that the time had come for further cooperation." Within a few months 15 faithful observers were enrolled, and over 1,400 meteors reported from California, Virginia, Tennessee, and Georgia. He desires to extend a hearty invitation to all who are interested in this subject, either because of its astronomical or its meteorological importance, and we hope that many will respond. Those whose business takes them out of doors during the nighttime can be especially useful. C. A.

CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting the greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS, JANUARY, 1913.

Section.	Temperature (° F.).							Precipitation (inches and hundredths).					
	Section average.	Departure from the normal.	Monthly extremes.					Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.			Station.	Amount.	Station.	Amount.
Alabama	52.2	+ 6.8	Thomasville	86	19	Riverton	19	13	6.12	+ 2.16	Riverton	11.12	Dothan	1.20
Arizona	38.7	− 4.7	Parker	79	25†	Flagstaff	−27	7	0.63	− 0.52	Oracle	2.00	Winslow	0.00
Arkansas	44.0	+ 3.6	Pine Bluff	78	5	Pond	− 1	8	8.45	+ 4.34	Newport	17.30	Pond	3.41
California	41.6	− 4.2	2 stations	88	3	Alturas	−21	23	5.06	− 0.35	Branscomb	20.47	2 stations	0.00
Colorado	19.7	− 4.2	Holly	68	29	Steamboat Springs	−54	7	0.84	− 0.01	Crested Butte	3.73	....do	T.
Florida	65.4	+ 8.2	Clermont	88	19	2 stations	30	2†	1.88	− 1.04	Monticello	4.91	St. Augustine	0.50
Georgia	53.5	+ 7.3	St. Marys	87	6	Clayton	21	14	3.49	− 0.32	Diamond	7.31	Glennville	1.03
Hawaii (December, 1912)	70.6	.....	Pahala, Hawaii	91	13	Humuula, Hawaii	28	31	8.01	.....	Kaenae Valley, Maui	40.43	Makapuu Pt., Oahu	0.35
Idaho	22.3	− 4.0	Lewiston	57	3	Driggs	−39	6	2.52	− 0.25	Grand Forks	10.71	Oakley	0.25
Illinois	30.7	+ 4.4	Cobden	68	17	2 stations	−10	12	4.59	+ 2.20	Golconda	12.66	Yorkville	0.37
Indiana	35.3	+ 6.4	Jeffersonville	66	20	Collegeville	− 3	9	8.12	+ 5.34	Rome	12.20	Whiting	1.68
Iowa	20.9	+ 1.6	Bedford	62	25	Thurman	−25	8	0.77	− 0.28	Grinnell	2.05	Le Mars	0.04
Kansas	29.7	0.0	2 stations	72	29	2 stations	−30	8	0.48	− 0.26	Columbus	2.08	Leoti	0.04
Kentucky	42.5	+ 7.3	Beattyville	76	7	Earlington	13	12	11.46	+ 7.76	Franklin	14.81	Pikeville	5.01
Louisiana	55.7	+ 4.7	Lake Charles	88	5	Grand Cane	7	8	5.88	+ 1.68	Simmesport	11.10	Lake Charles	0.50
Maryland & Delaware	41.9	+ 9.7	Annapolis, Md	74	22	2 stations	8	9	3.17	+ 0.14	Deer Park, Md	5.85	Denton, Md	2.17
Michigan	24.1	+ 3.8	Jackson	60	19	Bergland	−31	13	2.25	+ 0.23	Wasepi	5.31	Humboldt	0.41
Minnesota	7.3	− 0.2	Redwood Falls	54	25	Bagley	−47	12	0.33	− 0.45	Fergus Falls	0.96	4 stations	T.
Mississippi	52.5	+ 6.0	2 stations	80	5†	Water Valley	20	9	8.69	+ 3.74	University	16.15	Pascagoula	3.16
Missouri	33.1	+ 1.8	....do	74	2†	Unionville	−12	13	3.67	+ 1.30	New Madrid	15.65	St. Joseph	0.55
Montana	15.7	− 2.8	Sun River Canyon	62	29	Valentine	−48	6	1.29	+ 0.41	Haugan	6.44	Mildred	0.04
Nebraska	23.3	+ 0.1	Ewing	73	29	2 stations	−30	6†	0.32	− 0.16	Fremont	1.15	McCook	0.00
Nevada	26.7	− 2.4	Logan	71	26	San Jacinto	−38	6	0.69	− 0.75	Glenbrook	4.95	2 stations	0.06
New England	32.1	+10.4	Clinton, Mass	63	3	Van Buren, Me	−30	29	3.30	− 0.49	Somerset, Vt	6.54	Houlton, Me	0.85
New Jersey	35.9	+ 9.3	2 stations	68	3†	3 stations	10	9†	3.58	− 0.27	Dover	4.71	Bergen Point	2.63
New Mexico	29.1	− 4.8	Carlsbad	76	4	Elizabethtown	−35	7	0.58	− 0.03	Placitas (near)	2.85	2 stations	T.
New York	31.9	+10.1	Addison	66	8	Nehasane	−15	9	4.36	+ 1.29	Leisers Mill	9.70	West Berne	1.23
North Carolina	48.5	+ 8.7	Willard	80	24	3 stations	13	4†	4.26	+ 0.47	Highlands	7.88	Sloan	1.49
North Dakota	3.2	− 2.3	Medora	60	28	Marstonmoor	−54	12	0.45	− 0.04	Medora	1.97	Hettinger	T.
Ohio	36.0	+ 7.8	Syracuse	70	20	Bowling Green	3	9	7.01	+ 4.17	Marion	10.80	Brilliant	4.50
Oklahoma	38.3	− 0.3	Pawhuska (2)	81	30	May	−23	8	1.37	− 0.23	Hugo	5.83	Mutual	0.00
Oregon	31.3	− 2.4	Echo (2)	63	2	Austin	−33	6	5.80	+ 0.43	Happy Home	25.67	Gurdane	0.14
Pennsylvania	36.5	+ 9.0	2 stations	65	18†	Skidmore	3	5	4.95	+ 1.68	Clearfield	8.90	Hyndman	1.51
Porto Rico	72.9	− 0.2	Lares	91	1†	Maricao	50	1†	4.36	+ 0.57	Rio Blanco	10.70	Isadora	0.80
South Carolina	53.8	+ 7.5	3 stations	82	8†	Liberty	23	14	3.21	− 0.10	Greenwood	6.33	Georgetown	0.50
South Dakota	16.0	+ 1.7	Greenwood	65	29	Camp Crook	−39	6	0.42	− 0.34	Dumont	3.70	13 stations	T.
Tennessee	45.9	+ 7.3	2 stations	75	7	Tazewell	13	4	10.32	+ 5.96	Pinewood	16.62	Mountain City	3.40
Texas	48.1	− 0.3	....do	87	5†	Romero	−15	8	1.60	− 0.29	Alvin	6.88	9 stations	0.00
Utah	21.3	− 4.4	St. George	65	26	Strawberry Tunnel (East)	−50	5	0.68	− 0.47	Park City	3.79	4 stations	0.00
Virginia	44.8	+ 9.6	Norfolk	77	8	Columbia	10	9	3.14	+ 0.01	Elk Knob	8.59	Woodstock	1.49
Washington	28.6	− 2.9	Moxee	65	2	Odessa	−19	19	5.69	+ 1.19	Quinlault	20.84	McConihe	0.59
West Virginia	40.7	+ 8.4	Powellton	74	11	Bayard	9	10	6.23	+ 2.60	Smithfield	10.53	Moorefield	1.84
Wisconsin	16.2	+ 1.5	Racine (2)	52	17	Solon Springs	−33	12	0.99	− 0.23	Fond du Lac	2.66	Superior	0.17
Wyoming	17.5	− 1.1	Kinnear	60	24	Crazy Creek	−54	6	1.07	− 0.27	Snake River	7.17	Eden	T.

† Other dates also.

TABLE I.—*Climatological data for United States Weather Bureau stations, January, 1913.*

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.											Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.									Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.								
New England.							**34.6**	**+10.2**												**76**	**3.33**	**− 0.3**											**6.5**		
Eastport	76	67	85	29.96	30.05	+ .05	27.8	+ 7.7	52	3	37	− 2	9	19	33	27	23	79	4.01	+ 0.2	14	10,750	w.	50	s.	4	6	10	15	6.8	7.9	....
Greenville	1,070	6	....	28.82	30.03	.....	20.4	.....	48	3	30	−15	13	10	39	.....	.....	.....	2.15	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12.5	6.0	
Portland, Me.	103	82	117	29.95	30.08	+ .03	31.6	+ 9.6	53	12	40	6	13	23	36	28	22	68	2.47	− 1.3	12	8,045	sw.	48	s.	3	12	4	15	6.0	5.0	....
Concord	288	70	79	29.75	30.08	+ .03	31.1	+ 9.9	59	31	40	5	9	22	36	.....	.....	.....	1.81	− 1.5	11	4,379	nw.	42	sw.	3	5	11	15	6.6	4.5	....
Burlington	404	11	48	29.59	30.05	.00	27.8	+11.5	52	3	37	− 6	13	19	38	.....	.....	.....	2.38	+ 0.6	13	12,544	s.	60	s.	3	7	7	17	7.0	11.0	....
Northfield	876	12	60	29.07	30.06	+ .01	27.0	+11.9	54	17	38	− 4	13	16	45	24	21	80	2.84	+ 0.4	16	7,026	s.	42	s.	23	6	6	19	7.2	7.8	0.1
Boston	125	115	188	29.95	30.09	+ .04	39.2	+12.2	62	6	48	13	9	31	33	35	30	71	2.38	− 1.4	11	9,155	sw.	48	w.	4	11	6	14	5.8	.03	....
Nantucket	12	14	90	30.10	30.11	+ .07	40.0	+ 7.9	55	12	46	19	9	34	27	38	35	82	5.57	+ 2.2	18	13,408	sw.	69	sw.	4	7	9	15	6.9	T.	....
Block Island	26	11	46	30.08	30.12	+ .05	39.2	+ 8.1	57	3	46	18	9	34	26	38	35	82	5.25	+ 1.4	15	14,816	sw.	70	sw.	4	10	6	15	6.4	T.	....
Narragansett	.....	9	.....	.....	.....	.....	38.2	+ 9.8	56	31	46	14	9	30	27	.....	.....	.....	4.65	.....	14	.....	sw.	.....	.....	.....	14	6	11	.....	T.	....
Providence	160	141	165	29.94	30.12	+ .06	38.0	+10.8	61	6	47	13	9	29	35	35	31	77	2.90	− 1.5	16	6,033	w.	42	sw.	3	10	8	13	5.9	1.6	....
Hartford	159	122	140	29.93	30.11	+ .04	37.0	+11.5	60	3	46	12	9	28	36	33	28	72	2.82	− 1.0	14	6,740	s.	58	sw.	3	6	11	14	6.7	0.8	....
New Haven	106	117	155	30.00	30.12	+ .04	38.2	+10.9	58	3	46	14	9	30	34	35	30	74	3.64	− 0.3	17	6,065	s.	53	sw.	3	6	9	16	6.6	1.9	....
Middle Atlantic States.							**41.7**	**+10.4**												**77**	**2.84**	**− 0.5**											**6.3**		
Albany	97	102	115	29.98	30.09	+ .02	34.6	+12.1	61	3	43	10	9	26	36	31	27	76	2.20	− 0.4	12	7,601	s.	44	sw.	3	6	10	15	6.9	T.	....
Binghamton	871	78	88	29.12	30.07	− .01	35.6	+12.5	57	20	44	12	9	27	40	.....	.....	.....	2.89	+ 0.9	13	5,325	e.	40	sw.	18	2	10	19	7.8	1.0	....
New York	314	414	454	29.78	30.13	+ .03	40.0	+ 9.8	61	12	48	18	9	32	37	36	31	71	2.77	− 1.0	16	13,836	sw.	86	sw.	3	11	4	16	6.0	0.3	....
Harrisburg	374	94	104	29.73	30.14	+ .04	38.6	+ 9.9	58	18	46	20	9	31	29	34	30	75	2.58	− 0.2	16	4,813	w.	46	sw.	3	7	6	18	6.7	0.8	....
Philadelphia	117	123	184	30.02	30.15	+ .04	42.2	+10.4	63	17	51	22	9	34	35	39	34	75	2.99	− 0.4	18	7,513	s.	52	s.	3	8	7	16	6.3	T.	....
Reading	325	81	98	29.78	30.15	.....	39.2	.....	61	12	48	19	9	31	34	36	33	81	3.81	.....	16	5,289	se.	42	nw.	8	9	5	17	6.4	1.7	....
Scranton	805	111	119	29.22	30.11	+ .02	37.2	+11.7	59	21	46	15	9	29	40	34	30	79	2.50	− 0.3	18	5,381	s.	42	sw.	3	4	11	16	7.2	1.7	....
Atlantic City	52	37	48	30.10	30.16	+ .05	42.4	+ 9.9	63	12	49	22	9	36	31	40	36	80	4.36	+ 1.0	14	6,458	sw.	39	s.	3	8	6	17	6.3	0.1	....
Cape May	17	13	49	30.15	30.17	+ .05	45.2	+ 9.1	62	8	50	24	13	36	30	40	38	84	4.22	− 0.8	16	7,161	s.	48	sw.	3	10	13	8	5.5	.....	....
Baltimore	123	100	113	30.02	30.15	+ .03	43.5	+10.1	68	17	52	25	9	35	34	39	35	75	2.45	− 0.8	18	4,754	sw.	40	s.	3	11	4	16	5.8	T.	....
Washington	112	62	85	30.02	30.15	+ .02	43.6	+10.7	68	8	54	24	14	34	37	39	34	72	2.85	− 0.5	16	5,243	s.	48	nw.	8	11	6	14	5.3	T.	....
Lynchburg	681	83	88	29.39	30.15	+ .02	45.2	+ 9.4	73	7	56	20	10	35	34	40	36	76	1.91	− 1.8	12	2,805	sw.	25	sw.	3	7	10	14	6.5	1.3	....
Mount Weather	1,725	10	75	28.24	30.12	− .01	38.8	+11.5	67	7	48	17	9	30	38	35	30	75	2.20	− 1.1	15	13,895	s.	74	nw.	12	8	6	17	6.5	0.8	....
Norfolk	91	170	205	30.08	30.18	+ .05	51.2	+10.8	77	8	60	31	9	43	37	46	42	76	3.39	0.0	10	11,033	sw.	64	sw.	3	10	8	13	6.0	T.	....
Richmond	144	11	52	30.02	30.18	+ .05	46.7	+ 8.7	75	8	57	25	15	36	38	42	38	78	2.53	− 0.5	13	7,162	s.	61	sw.	3	9	3	19	6.4	0.4	....
Wytheville	2,293	40	47	27.73	30.16	+ .02	42.4	+ 9.4	72	7	54	19	10	31	36	37	34	82	2.79	− 1.5	11	3,899	w.	36	w.	3	12	7	12	5.3	1.0	....
South Atlantic States.							**54.7**	**+ 9.6**												**82**	**2.41**	**− 1.5**											**6.2**		
Asheville	2,255	70	84	27.78	30.19	+ .04	45.3	+ 9.9	70	7	55	22	9	35	34	40	37	78	2.95	− 1.7	10	8,002	se.	39	se.	12	9	11	11	5.7	T.	....
Charlotte	773	68	76	29.34	30.19	+ .04	48.8	+ 8.4	71	8	58	27	14	40	34	45	41	80	3.70	− 0.6	13	6,016	sw.	47	sw.	3	7	7	17	6.8	T.	....
Hatteras	11	12	47	30.18	30.19	+ .05	56.2	+10.4	71	17	63	38	4	50	27	53	51	86	3.62	− 1.3	15	12,674	sw.	63	w.	4	5	12	14	6.3	.....	....
Manteo	12	12	46	.....	.....	.....	53.2	.....	74	8	63	30	29	43	.....	.....	.....	.....	1.56	− 3.1	6	.....	sw.	.....	.....	16	8	7	.....	.....	.....	....
Raleigh	376	103	110	29.78	30.19	− .06	50.2	+ 9.8	73	8	59	30	15	41	33	45	41	76	5.95	+ 2.4	13	6,816	sw.	50	sw.	3	8	8	15	6.4	T.	....
Wilmington	78	81	91	30.12	30.20	+ .06	55.6	+10.0	76	24	65	32	4	47	28	51	48	82	1.80	− 1.7	12	6,672	sw.	38	w.	3	7	15	9	6.1	.....	....
Charleston	48	11	92	30.15	30.20	+ .05	58.3	+ 9.0	77	21	66	37	4	51	25	54	52	87	0.99	− 2.5	10	7,619	sw.	39	sw.	3	7	10	14	6.1	.....	....
Columbia, S. C.	351	41	57	29.81	30.20	+ .05	54.4	+ 9.3	75	7	63	30	14	45	28	49	45	78	1.56	− 1.7	10	5,947	sw.	56	sw.	3	7	8	16	6.2	.....	....
Augusta	180	89	97	30.00	30.19	+ .03	55.3	+ 9.4	76	6	64	31	14	46	30	50	47	80	1.59	− 2.6	13	4,824	s.	42	w.	3	5	8	18	6.7	.....	....
Savannah	65	150	194	30.13	30.20	+ .05	59.7	+ 9.8	78	8	67	39	4	52	25	55	52	86	1.24	− 1.9	11	8,330	s.	58	w.	3	6	8	17	6.6	.....	....
Jacksonville	43	96	129	30.14	30.19	+ .04	63.6	+ 9.7	80	21	72	43	4	56	24	58	56	89	1.53	− 1.6	7	7,010	ne.	46	sw.	3	11	13	7	4.9	.....	....
Florida Peninsula.							**70.6**	**+ 7.0**												**82**	**2.38**	**−0.4**											**4.0**		
Key West	22	41	49	30.11	30.13	+.03	74.2	+ 5.4	82	25	79	60	4	70	15	69	67	84	1.62	−0.4	13	7,586	ne.	38	s.	27	18	11	2	3.4	.....	....
Miami	25	37	72	30.14	30.17	.....	72.4	+ 5.1	82	1	78	47	4	67	23	67	64	80	4.42	+1.0	11	7,303	se.	26	ne.	15	12	14	5	4.6	.....	....
Sand Key	23	39	72	30.09	30.12	+.02	73.1	.....	78	25	76	61	4	71	12	69	66	79	1.12	.....	10	13,836	e.	44	nw.	27	19	12	0	3.5	.....	....
Tampa	35	79	96	30.14	30.18	+.06	68.1	+10.7	83	7	76	45	29	60	23	62	60	83	1.09	−1.7	4	5,649	ne.	30	nw.	3	17	8	6	3.9	.....	....
Titusville	44	6	....	30.14	30.19	.....	67.8	+ 6.7	86	8	76	41	4	59	29	.....	.....	.....	1.09	.....	14	.....	e.	.....	.....	.....	14	12	5	4.4	.....	....
East Gulf States.							**54.8**	**+ 7.4**												**82**	**5.11**	**+0.1**											**6.3**		
Atlanta	1,174	190	216	28.92	30.18	+.03	49.5	+ 7.3	69	6	58	29	3	41	35	46	42	82	5.76	+0.4	15	9,434	se.	58	sw.	3	6	5	20	7.1	T.	....
Macon	370	78	87	29.78	30.18	+.02	53.8	+ 8.2	75	6	64	32	4	44	33	49	46	82	1.87	−3.3	12	4,811	s.	36	sw.	3	7	8	16	6.6	T.	....
Thomasville	273	8	57	29.88	30.18	+.02	59.4	+ 8.4	81	6	69	35	4	50	33	54	52	86	1.65	−2.5	10	4,407	s.	33	sw.	27	11	6	14	5.8	.....	....
Pensacola	56	140	183	30.10	30.16	+.02	58.0	+ 5.7	72	24	65	36	28	51	24	55	52	85	2.17	−1.9	13	10,323	se.	60	s.	26	5	11	15	6.4	.....	....
Anniston	741	9	57	29.38	30.19	+.03	51.2	+ 9.0	74	6	61	27	28	41	39	.....	.....	.....	6.28	+1.0	16	5,376	se.	27	nw.	3	11	7	13	5.7	0.2	....
Birmingham	700	11	48	29.40	30.18	+.02	52.0	+ 6.7	74	7	61	26	9	43	38	46	43	77	8.25	+2.9	15	7,237	s.	33	s.	4	10	6	15	6.2	T.	....
Mobile	57	98	106	30.09	30.15	.00	57.4	+ 7.6	74	24	65	36	28	50	26	53	50	83	4.29	−0.6	12	6,431	se.	36	w.	2	6	11	14	6.1	.....	....
Montgomery	223	100	112	29.93	30.19	+.03	54.7	+ 7.0	77	7	64	32	28	45	34	50	47	82	4.33	−0.8	13	5,656	se.	36	w.	2	9	9	13	6.0	.....	....
Meridian	375	84	93	29.75	30.15	−.01	53.2	+ 8.2	75	7	63	28	9	43	31	49	46	82	8.89	+3.4	14	4,906	s.	33	w.	2	8	8	15	6.6	.....	....
Vicksburg	247	62	74	29.86	30.15	.00	53.7	+ 6.7	75	5	63	27	8	45	42	50	46	79	7.00	+1.3	16	6,525	se.	38	nw.	2	8	3	20	6.7	.....	....
New Orleans	51	90	121	30.08	30.14	+.01	59.9	+ 6.9	79	20	68	40	9	52	27	56	54	85	5.71	+1.1	11	7,285	se.	33	nw.	3	5	9	17	6.8	.....	....
West Gulf States.							**48.4**	**+ 2.3**												**76**	**3.63**	**+0.7**											**5.6**		
Shreveport	249	77	93	29.85	30.13	−.01	50.5	+ 4.3	73	20	60	16	8	41	34	46	42	77	4.21	−0.2	14	5,015	se.	26	nw.	2	11	3	17	6.1	.....	....
Bentonville	1,303	11	44	28.67	30.07	−.07	37.4	+ 3.3	67	19	48	4	8	26	43	.....	.....	.....	3.42	+0.8	9	5,100	s.	28	s.	1	15	6	10	4.9	1.0	T.
Fort Smith	457	79	94	29.60	30.10	−.04	41.0	+ 2.7	69	19	50	10	8	32	36	37	32	73	5.29	+2.8	9	7,189	e.	37	nw.	30	13	4	14	5.6	0.1	....
Little Rock	357	139	147	29.72	30.12	−.03	45.1	+ 4.5	69	19	54	15	8	36	30	41	38	80	11.29	+6.5	10	7,384	s.	36	nw.	20	13	5	13	5.5	T.	....
Brownsville	57	4	.....	.....	.....	.....	58.6	.....	79	18	68	30	7	49	39	.....	.....	.....	2.05	.....	14	.....	n.	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
Corpus Christi	20	69	77	30.11	30.13	+.03	54.4	+ 0.9	76	30	62	27	7	47	36	50	47	82	0.92	−1.3	12	7,696	se.	39	n.	20	9	4	18	6.4	.....	....
Fort Worth	670	106	114	29.37	30.10	−.02	46.1	+ 1.8	78	1	56	13	7	36	38	40	32	64	2.30	+1.4	6	8,610	nw.	39	nw.	2	12	2	19	5.5	0.7	....
Galveston	54	106	114	30.07	30.13	.00	54.6	+ 1.9	70	20	60	27	8	49	22	52	50	86	2.92	−0.7	9	9,626	n.	46	nw.	2	13	6	12	5.3	.....	....
Houston	138	111	121	29.96	30.12	.....	54.8	+ 1.9	79	20	64	24	7	46	36	.....	.....	.....	3.34	.....	10	6,685	nw.	29	nw.	2	9	5	17	6.4	T.	....
Palestine	510	64	72	29.59	30.13	+.01	48.2	+ 1.7	71	19	57	15	8	40	33	44	41	82	3.45	−0.4	8	6,339	s.	28	nw.	2	12	8	11	4.8	T.	....
San Antonio	701	80	91	29.38	30.12	+.02	52.4	+ 1.3	77	5	62	20	7	43	33	46	40	68	0.90	−0.8	8	4,844	n.	27	n.	20	9	9	13	5.8	.....	....
Taylor	583	55	63	29.53	30.15	+.04	48.6	+ 1.1	75	3	59	16	8	38	43	.....	.....	.....	1.62	−1.2	6	7,254	s.	32	sw.	1	10	6	15	5.6	T.	....
Ohio Valley and Tennessee.							**41.6**	**+ 8.4**												**80**	**8.24**	**+4.4**											**7.1**		
Chattanooga	762	189	213	29.36	30.18	+.02	48.8	+ 8.2	73	7	58	27	9	40	39	44	41	78	7.13	+1.6	18	7,533	s.	38	w.	3	5	12	14	6.5	0.1	....
Knoxville	996	93	100	29.08	30.16	+.01	46.4	+ 8.9	73	7	57	25	4	36	40	42	39	82	8.93	+4.0	18	3,987	e.	29	sw.	12	8	6	17	6.5	2.4	....
Memphis	399	76	97	29.71	30.15	−.01	46.0	+ 5.7	70	5	54	21	8	38	35	42	38	77	7.71	+2.5	13	7,722	s.	54	nw.	20	9	5	17	6.6	.....	....
Nashville	546	168	191	29.56	30.16	.00	45.4	+ 7.4	69	20	54	26	8	36	36	42	39	80	12.30	+7.4	16	9,227	se.	46	nw.	11	8	6	17	6.6	0.5	....
Lexington	989	75	102	29.04	30.14	+.01	41.6	+ 8.6	66	20	51	19	9	32	35	.....	.....	.....	10.35	+6.5	20	9,842	s.	44	nw.	3	5	8	18	7.4	3.7	....
Louisville	525	111	132	29.53	30.13	−.01	41.4	+ 7.1	66	20	50	15	31	32	39	38	34	78	9.91	+6.0	15	8,483	s.	40	s.	30	5	8	18	7.4	1.0	....
Evansville	431	72	82	29.63	30.11	−.03	39.4	+ 7.1	61	5	47	14	31	31	31	37	33	78	10.27	+6.6	17	7,352	s.	36	s.	17	5	11	15	6.7	2.7	....
Indianapolis	822	154	164	29.17	30.08	−.04	35.1	+ 6.9	59	20	44	5	31	27	41	33	30	83	7.63	+4.8	17	9,211	s.	36	nw.	20	3	9	19	7.3	1.7	T.

TABLE I.—*Climatological data for United States Weather Bureau stations, January, 1913*—Continued.

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.						
***Ohio Valley and Tennessee*—Continued.**																																
Terre Haute	575	96	129	29.44	30.08	.....	34.8	.....	60	20	43	5	31	26	40	32	30	83	7.71	.....	16	8,743	s.	33	s.	30	3	14	14	7.4	2.1	T.
Cincinnati	628	152	160	29.41	30.11	−.01	40.6	+ 8.3	64	20	50	12	31	32	40	37	34	78	9.02	+5.7	18	5,258	se.	29	sw.	18	3	8	20	7.9	1.5	T.
Columbus	824	173	222	29.19	30.09	−.02	36.8	+ 8.2	62	20	46	8	31	28	40	35	32	84	6.63	+3.7	19	9,705	s.	58	nw.	18	7	5	19	7.1	5.9	....
Dayton	899	181	216	29.09	30.08	.....	36.9	+ 8.0	60	20	46	8	31	28	42	34	32	83	6.66	+3.6	19	10,182	s.	46	s.	11	4	6	21	7.8	2.9	T.
Pittsburgh	842	353	410	29.16	30.09	−.02	40.2	+ 9.5	63	20	49	19	9	32	37	36	32	74	5.28	+2.4	20	9,730	sw.	58	sw.	18	7	5	19	6.9	9.3	T.
Elkins	1,940	41	50	28.02	30.14	+.02	41.2	+12.2	65	20	54	17	13	29	40	35	32	81	5.30	+2.0	20	2,924	s.	24	w.	20	7	9	15	6.6	2.1	T.
Parkersburg	638	77	84	29.45	30.12	.00	42.2	+10.9	68	20	52	23	3	33	34	38	35	81	8.22	+5.0	20	5,142	s.	37	nw.	20	6	5	20	7.5	3.5	....
Lower Lake Region.							**32.7**	**+ 8.4**											**80**	**5.15**	**+ 2.5**								**7.7**		
Buffalo	767	178	206	29.18	30.03	− .04	33.8	+ 9.1	56	20	40	13	13	27	26	31	29	84	5.56	+ 2.3	15	16,109	sw.	70	w.	31	4	7	20	7.5	7.0	....
Canton	448	10	61	29.54	30.04	.....	26.8	+10.5	54	31	36	−11	9	17	43	.....	.....	.....	4.93	+ 1.8	17	10,056	sw.	50	e.	3	4	8	19	7.4	16.3	....
Oswego	335	76	91	29.65	30.03	− .04	32.0	+ 8.1	56	17	39	5	9	25	26	30	27	82	4.45	+ 1.3	16	9,697	s.	44	nw.	4	2	3	26	8.7	7.2	....
Rochester	523	86	102	29.46	30.05	− .02	33.6	+ 9.7	56	17	40	13	9	27	27	30	26	74	4.86	+ 1.7	15	7,184	w.	42	sw.	18	3	5	23	7.9	10.0	....
Syracuse	597	97	113	29.39	30.05	− .02	33.8	+10.8	56	17	42	4	9	26	30	31	26	76	3.80	+ 1.7	16	11,227	s.	54	s.	23	4	6	21	7.6	7.7	T.
Erie	714	92	102	29.25	30.04	− .04	35.9	+ 9.4	59	20	43	20	9	29	30	32	29	78	5.60	+ 2.6	17	10,281	s.	41	w.	3	4	6	21	7.9	4.1	T.
Cleveland	762	190	201	29.21	30.04	− .05	35.3	+ 9.1	59	20	43	14	9	28	32	32	28	79	5.66	+ 3.2	19	12,455	s.	60	w.	18	5	6	20	7.3	6.2	0.2
Sandusky	629	62	70	29.36	30.06	− .03	34.3	+ 8.0	58	20	42	11	9	27	34	31	28	82	6.10	+ 4.0	16	6,968	sw.	37	w.	18	3	4	24	8.3	10.7	T.
Toledo	628	208	246	29.35	30.06	− .03	32.0	+ 6.4	57	17	39	11	9	25	35	30	27	81	6.63	+ 4.7	17	12,221	sw.	56	w.	18	6	5	20	7.1	5.8	T.
Fort Wayne	856	113	124	29.11	30.06	.....	31.8	+ 4.9	56	17	39	3	31	24	42	30	26	82	5.54	.....	19	8,186	sw.	39	sw.	18	6	6	19	7.2	10.0	0.1
Detroit	730	218	258	29.23	30.04	− .04	30.3	+ 6.0	54	17	37	12	13	24	33	28	25	83	3.95	+ 2.0	16	9,542	sw.	43	nw.	18	5	5	21	7.7	8.0	T.
Upper Lake Region.							**21.5**	**+ 3.3**											**82**	**1.65**	**− 0.4**								**7.8**		
Alpena	609	13	92	29.32	30.00	− .04	23.1	+ 4.4	50	17	30	2	28	16	29	22	19	84	1.53	− 0.7	16	8,690	sw.	37	s.	22	1	9	21	7.9	17.2	3.8
Escanaba	612	54	60	29.30	30.00	− .05	17.5	+ 3.0	40	17	26	− 6	21	10	35	17	13	81	0.82	− 0.7	12	7,200	nw.	37	sw.	21	4	5	22	7.6	8.6	5.0
Grand Haven	632	54	92	29.32	30.02	− .05	28.0	+ 3.5	49	16	34	12	28	22	22	26	24	83	1.72	− 1.1	17	10,405	s.	39	w.	31	3	6	22	8.0	11.0	0.9
Grand Rapids	707	70	87	29.24	30.03	− .03	28.2	+ 4.4	54	17	35	13	21	22	28	26	24	88	1.86	− 0.9	16	5,372	s.	24	ne.	7	3	5	23	8.3	13.1	0.9
Houghton	684	62	72	29.20	29.96	− .09	15.5	+ 1.0	41	17	24	− 8	21	7	29	.....	.....	.....	1.62	− 0.4	18	6,386	nw.	36	w.	17	2	4	25	8.5	24.4	36.0
Lansing	878	11	62	29.05	30.02	.....	26.2	+ 4.2	52	17	34	1	13	18	30	25	23	87	3.10	+ 1.0	17	5,542	sw.	31	s.	4	2	4	22	7.8	18.7	0.2
Ludington	637	60	66	29.29	30.00	.....	26.6	.....	47	16	33	9	12	20	23	25	22	80	1.81	.....	15	9,897	s.	48	sw.	21	1	5	25	8.7	13.2	3.2
Marquette	734	77	111	29.16	30.00	− .04	17.7	+ 1.8	43	17	25	− 8	21	10	29	16	12	78	2.03	0.0	18	9,113	nw.	48	sw.	9	2	6	23	8.4	20.2	13.9
Port Huron	638	70	120	29.31	30.03	− .03	28.1	+ 6.3	52	17	35	5	9	21	31	27	24	85	3.08	+ 1.2	17	9,403	sw.	38	w.	31	3	7	21	7.7	8.8	T.
Saginaw	641	62	64	29.30	30.02	.....	26.8	.....	53	17	34	6	13	20	28	25	23	86	1.85	.....	11	5,835	s.	25	.....	31	2	7	22	7.9	13.5	T.
Sault Sainte Marie	614	11	61	29.27	30.00	− .03	17.7	+ 4.4	44	17	26	− 9	31	10	35	17	15	86	1.31	− 0.9	19	7,449	se.	36	w.	20	2	6	23	8.6	16.0	9.5
Chicago	823	140	310	29.13	30.05	− .05	29.3	+ 5.6	55	17	37	0	12	22	32	27	23	75	1.33	− 0.7	14	11,191	s.	37	ne.	7	4	10	17	7.1	6.1	0.1
Green Bay	617	109	144	29.32	30.01	− .05	18.4	+ 3.8	47	17	27	− 7	12	10	31	17	13	77	1.17	− 0.5	10	9,538	s.	44	sw.	21	5	9	17	7.6	13.0	4.1
Milwaukee	681	119	133	29.26	30.02	− .06	23.8	+ 4.0	51	17	32	− 5	12	16	29	22	18	75	1.07	− 0.9	11	8,525	sw.	33	ne.	7	5	11	15	6.6	9.7	T.
Duluth	1,133	11	47	28.73	30.02	− .07	6.3	− 4.1	38	1	16	−28	12	−4	41	5	2	84	0.75	− 0.2	12	9,759	nw.	56	sw.	9	8	9	14	6.2	9.3	9.0
North Dakota.							**2.5**	**− 1.5**											**86**	**0.43**	**− 0.2**								**5.4**		
Moorhead	940	8	57	29.03	30.11	− .03	1.0	− 1.7	36	16	12	−37	12	−10	46	0	− 3	83	0.45	− 0.3	11	6 739	nw.	28	nw.	31	15	8	8	4.2	4.5	10.9
Bismarck	1,674	8	57	28.21	30.11	− .02	5.6	− 1.1	42	28	17	−37	12	−5	40	4	1	87	0.37	− 0.2	5	7,521	nw.	47	nw.	1	10	12	9	5.4	3.8	3.0
Devils Lake	1,482	11	44	28.36	30.05	− .07	−1.4	− 1.7	36	28	8	−32	12	−11	37	− 2	− 4	90	0.38	− 0.2	9	8,267	nw.	35	nw.	4	12	8	11	5.2	5.7	3.2
Williston	1,872	40	47	27.96	30.05	− .06	5.0	− 1.5	41	28	17	−35	12	−7	42	3	1	86	0.52	− 0.1	7	5,628	n.	38	nw.	1	6	6	19	7.0	3.4	0.5
Upper Mississippi Valley.							**25.6**	**+ 4.0**											**79**	**2.17**	**+ 0.4**								**6.5**		
Minneapolis	918	102	208	.....	.....	.....	13.0	.....	43	26	23	−19	12	3	40	.....	.....	.....	0.42	− 0.3	9	9,477	nw.	38	w.	17	8	18	5	5.1	4.5	2.1
St. Paul	837	201	236	29.09	30.04	− .07	13.8	+ 2.2	45	16	24	−18	12	4	38	12	6	68	0.33	− 0.6	8	10,389	nw.	48	w.	17	10	13	8	5.0	4.1	2.2
La Crosse	714	11	48	29.24	30.05	− .06	18.2	+ 3.0	51	16	28	−10	12	8	32	.....	.....	.....	0.89	− 0.2	9	4,779	nw.	24	sw.	21	7	9	15	6.7	14.9	1.5
Madison	974	70	78	28.95	30.06	− .04	19.4	+ 2.9	49	17	29	− 9	12	10	36	18	15	83	1.64	+ 0.1	9	8,642	nw.	37	ne.	7	6	12	13	6.6	17.5	2.6
Charles City	1,015	10	49	28.94	30.06	− .08	16.5	+ 5.1	48	1	28	−14	8	6	42	14	12	88	0.27	− 0.7	5	6,471	nw.	27	sw.	9	4	14	13	6.9	9.7	T.
Davenport	606	71	79	29.38	30.07	− .05	25.6	+ 4.8	55	16	35	− 7	12	16	34	23	20	80	1.04	− 0.5	9	6,607	sw.	27	w.	31	7	12	12	6.3	7.4	0.1
Des Moines	861	84	97	29.12	30.07	− .07	23.5	+ 3.1	55	29	33	− 9	12	14	42	20	14	71	1.10	− 0.1	7	6,925	sw.	37	sw.	21	11	11	9	5.0	16.1	....
Dubuque	698	81	96	29.30	30.08	− .04	22.7	+ 4.4	53	16	32	− 7	12	13	38	20	16	79	1.11	− 0.4	9	5,707	s.	23	nw.	30	6	10	15	6.5	9.0	0.4
Keokuk	614	64	78	29.38	30.09	− .05	28.4	+ 4.7	60	16	38	− 5	12	19	39	25	22	80	1.04	− 0.6	8	7,239	s.	33	w.	31	7	19	5	5.2	4.5	....
Cairo	356	87	93	29.71	30.11	− .05	40.2	+ 5.4	64	5	48	17	12	32	34	37	33	77	11.65	+ 7.8	11	8,249	s.	38	nw.	20	8	4	19	6.8	0.3	....
La Salle	536	56	64	29.48	30.08	− .03	27.2	+ 4.9	57	17	36	− 3	12	19	29	.....	.....	.....	1.29	− 0.9	11	7,104	sw.	29	nw.	31	4	10	17	7.0	5.2	T.
Peoria	609	11	45	29.39	30.08	− .04	27.8	+ 4.7	54	17	36	− 3	12	19	30	26	24	86	2.18	0.0	13	6,690	s.	28	w.	31	8	7	16	6.9	7.3	T
Springfield, Ill.	644	10	91	29.37	30.08	− .05	30.6	+ 4.3	56	17	39	3	12	22	34	29	26	82	3.55	+ 1.3	14	7,962	s.	27	w.	31	5	7	19	7.4	0.8	....
Hannibal	534	74	109	29.47	30.07	− .06	30.0	+ 3.3	59	16	40	− 1	12	20	34	.....	.....	.....	1.66	− 0.5	9	8,191	sw.	30	s.	16	10	9	12	5.9	0.9	....
St. Louis	567	208	217	29.46	30.08	− .06	34.8	+ 3.8	64	19	44	7	12	26	43	32	28	77	4.34	+ 2.1	12	9,647	s.	32	w.	30	9	7	15	6.6	T.	....
Missouri Valley.							**24.7**	**+ 3.7**											**71**	**0.79**	**− 0.2**								**4.8**		
Columbia, Mo.	784	11	84	29.21	30.07	− .06	31.1	+ 3.9	64	19	41	2	12	21	35	.....	.....	.....	2.57	+ 0.3	9	7,568	s.	30	nw.	36	8	10	13	6.2	T.	....
Kansas City	963	161	181	29.02	30.09	− .06	30.1	+ 3.9	60	29	39	− 2	12	21	36	26	20	68	0.65	− 0.5	9	11,286	s.	42	nw.	30	11	11	9	5.2	4.1	T.
St. Joseph	967	11	49	29.01	30.08	.....	27.7	.....	60	29	37	− 4	12	18	39	24	18	72	0.55	.....	6	7,854	nw.	33	nw.	30	11	12	8	4.8	6.0	....
Springfield, Mo.	1,324	98	104	28.64	30.09	− .05	34.2	+ 2.9	68	19	44	5	12	24	42	31	27	79	3.40	+ 0.7	9	9,393	s.	31	s.	16	11	8	12	5.2	0.8	T.
Iola	984	11	50	29.00	30.10	− .04	30.6	+ 3.0	63	19	41	− 3	8	20	37	.....	.....	.....	0.85	− 0.1	7	7,196	s.	33	ne.	4	13	9	9	4.8	1.0	T.
Topeka	983	85	101	.....	.....	.....	28.8	+ 3.2	65	29	38	− 5	8	19	39	.....	.....	.....	0.50	− 0.4	4	9,088	s.	34	nw.	26	13	13	5	4.0	5.3	T.
Lincoln	1,189	11	84	28.77	30.09	− .06	24.0	+ 2.8	63	29	34	−11	12	14	37	20	14	70	0.31	− 0.3	5	10,122	s.	42	n.	30	14	6	11	4.8	4.5	....
Omaha	1,105	115	121	28.86	30.09	− .06	23.8	+ 3.3	59	29	33	− 6	12	15	33	20	14	71	0.69	0.0	6	8,528	s.	40	n.	30	15	8	8	4.5	7.7	....
Valentine	2,598	47	54	27.25	30.09	− .03	21.0	+ 2.8	58	29	35	−19	6	7	49	15	10	74	0.15	− 0.4	6	7,837	nw.	46	nw.	25	13	7	11	4.8	1.4	T.
Sioux City	1,135	94	164	28.80	30.08	− .07	19.2	+ 3.6	58	25	29	−12	31	9	35	16	11	70	0.21	− 0.3	5	10,980	nw.	48	nw.	16	15	13	3	3.5	2.2	....
Huron	1,306	56	67	28.63	30.10	− .06	15.2	+ 5.7	56	25	28	−20	6	2	47	11	6	74	0.03	− 0.5	3	8,283	nw.	37	nw.	1	11	10	10	5.0	0.3	T.
Pierre	1,572	70	75	28.37	30.12	− .01	18.6	+ 4.7	57	25	30	−16	6	7	43	14	6	63	T.	− 0.5	0	7,713	nw.	39	w.	1	10	15	6	4.8	T.	....
Yankton	1,233	49	57	28.69	30.07	− .09	20.0	+ 4.5	60	29	32	−13	31	9	41	.....	.....	.....	0.08	− 0.5	4	7,526	nw.	34	nw.	1	9	13	9	5.4	0.9	....
Northern Slope.							**17.5**	**− 1.5**											**73**	**1.24**	**+ 0.4**								**6.2**		
Havre	2,505	11	44	27.29	30.08	− .02	6.9	− 6.6	44	2	18	−36	20	−4	60	6	3	85	1.46	+ 0.8	11	6,563	sw.	37	w.	25	1	10	20	8.1	14.2	1.4
Helena	4,110	87	114	25.69	30.04	− .11	19.6	− 0.4	50	28	29	−17	13	10	41	17	11	71	0.79	− 0.1	12	6,712	sw.	70	sw.	2	3	6	22	7.8	13.5	0.1
Kalispell	2,962	11	34	26.86	30.05	− .07	18.2	− 1.4	45	29	26	−12	6	10	31	17	14	83	2.69	+ 1.1	16	2,730	nw.	24	nw.	3	7	5	19	7.1	12.7	10.4
Miles City	2,371	26	48	27.44	30.12	.00	11.3	− 3.2	47	25	21	−34	5	1	41	9	5	81	1.80	+ 1.2	15	4,136	w.	36	w.	2	5	14	12	6.1	15.5	T.
Rapid City	3,234	46	50	26.52	30.10	.00	19.7	− 1.8	56	29	32	−22	6	7	64	15	8	66	0.62	+ 0.2	6	5,409	w.	51	w.	18	8	14	9	5.7	5.6	2.0
Cheyenne	6,088	58	64	23.87	30.04	− .01	24.4	− 1.2	54	14	35	−26	6	14	35	18	10	58	0.55	+ 0.2	6	10,727	nw.	54	nw.	3	11	15	5	4.5	5.8	1.0
Lander	5,372	60	68	24.53	30.07	− .05	20.6	+ 3.2	57	28	34	−26	7	7	41	16	8	60	0.49	+ 0.1	4	5,659	sw.	64	w.	17	11	12	8	4.5	2.2	0.2
Sheridan	3,790	10	47	26.00	30.08	.....	14.4	.....	54	25	30	−34	6	−1	67	11	7	79	1.91	.....	12	5,290	nw.	48	nw.	25	4	12	15	6.7	19.6	6.3
Yellowstone Park	6,200	11	48	23.75	30.12	− .02	13.5	− 4.1	36	25	22	−32	6	5	31	13	10	79	2.60	+ 0.4	22	8,434	s.	41	s.	17	5	6	20	7.3	26.8	23.5
North Platte	2,821	11	51	27.06	30.11	− .01	23.7	+ 2.3	65	29	37	−14	6	11	44	18	12	69	0.16	− 0.3	2	5,879	w.	34	nw.	1	12	16	3	4.2	1.6	....

TABLE I.—*Climatological data for United States Weather Bureau stations, January, 1913*—Continued.

Districts and stations.	Elevation of instruments.			Pressure in inches.			Temperature of the air, in degrees Fahrenheit.										Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Precipitation, inches.			Wind.				Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Barometer above sea level, feet.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.					Total.	Departure from normal.	Days with 0.01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
Middle Slope.							**30.6 + 1.5**												**63**	**0.41 − 0.3**									**4.2**		
Denver	5,291	129	172	24.62	30.02	− .03	30.4 + 1.3	59	28	42	−21	6	19	39	23	12	48	0.36	− 0.1	6	6,529	sw.	42	nw.	3	17	12	2	3.3	5.8	....
Pueblo	4,685	80	86	25.22	30.05	− .00	29.0 − 0.1	63	25	44	−25	7	14	46	22	12	55	0.31	− 0.0	4	6,032	nw.	48	w.	3	22	6	3	2.6	6.2	....
Concordia	1,398	42	50	28.57	30.10	− .04	27.0 + 2.6	68	29	38	−13	8	16	37	22	17	73	0.55	− 0.2	3	6,536	s.	30	sw.	21	7	14	10	5.8	5.5	T.
Dodge City	2,509	11	51	27.42	30.13	+ .02	29.4 + 2.1	69	29	43	−14	8	16	44	22	15	64	0.28	− 0.2	3	9,025	s.	36	nw.	17	16	9	6	4.0	5.0	T.
Wichita	1,358	139	158	28.60	30.08	− .05	30.6 + 0.9	60	29	40	−10	8	21	37	26	20	68	0.41	− 0.4	5	11,898	s.	40	n.	30	13	11	7	4.4	6.5	....
Oklahoma	1,214	10	47	28.78	30.11	.00	37.0 + 2.3	71	17	48	2	8	26	44	31	25	70	0.56	− 0.8	5	13,170	s.	48	n.	30	14	7	10	4.8	0.9	....
Southern Slope.							**41.0 − 0.5**												**62**	**0.35 − 0.5**									**4.4**		
Abilene	1,738	10	52	28.27	30.12	+ .03	44.2 + 1.6	76	17	56	9	8	33	38	36	26	58	0.25	− 0.6	5	8,391	s.	34	s.	9	12	7	12	5.2	0.4	....
Amarillo	3,676	10	49	26.27	30.10	+ .04	35.0 + 1.1	67	29	48	− 2	7	22	38	27	21	66	0.11	− 0.5	3	10,427	sw.	38	ne.	1	21	10	0	3.0	1.1	....
Del Rio	944	8	57	29.11	30.12	+ .06	50.0 − 0.2	79	30	62	18	8	38	42	.....	.....	.....	0.45	− 1.2	6	3,923	se.	24	nw.	2	13	3	15	5.5	.....	.....
Roswell	3,566	9	57	26.40	30.11	+ .07	34.8 − 4.4	74	4	50	−19	8	19	49	28	20	63	0.60	+ 0.1	2	4,345	n.	37	n.	1	17	9	5	3.7	7.0	....
Southern Plateau.							**36.2 − 4.6**												**60**	**0.38 − 0.3**									**2.9**		
El Paso	3,762	110	133	26.23	30.08	+ .07	40.3 − 3.8	70	4	53	2	8	28	43	32	20	49	0.49	0.0	4	8,214	nw.	50	sw.	5	19	8	4	2.8	2.1	....
Santa Fe	7,013	57	62	23.18	30.13	+ .09	24.8 − 3.7	49	4	36	−12	7	14	36	19	12	63	0.57	0.0	5	5,841	n.	42	se.	5	17	10	4	3.8	8.7	T.
Flagstaff	6,907	8	57	.....	.....	.....	21.2 − 5.5	59	3	36	−23	11	6	49	.....	.....	.....	0.76	.....	5	.....	w.	48	w.	4	16	8	7	...	7.6	0.5
Phoenix	1,108	50	56	28.91	30.09	+ .06	47.2 − 2.8	71	29	60	16	7	34	35	41	33	64	0.38	− 0.8	2	2,536	w.	20	w.	4	18	5	8	3.5	.....	.....
Yuma	141	9	58	29.95	30.10	+ .05	50.2 − 4.5	78	29	64	24	6	36	38	40	26	44	0.12	− 0.3	2	5,676	n.	34	n.	4	29	1	1	1.1	.....	.....
Independence	3,910	11	42	26.08	30.17	+ .10	33.4 − 7.1	65	1	46	4	7	20	35	29	26	82	0.34	− 0.6	2	5,754	nw.	42	se.	16	16	11	4	3.5	T.	....
Middle Plateau.							**23.9 − 3.9**												**70**	**0.68 − 0.4**									**4.3**		
Reno	4,532	74	81	25.51	30.18	+ .05	29.9 − 2.6	60	3	41	− 1	6	19	41	26	20	69	1.46	− 0.5	4	4,856	w.	48	w.	18	15	6	10	4.3	19.9	T.
Tonopah	6,090	12	20	24.05	30.16	.....	26.1	50	3	33	− 6	6	19	31	22	16	66	0.18	− 0.6	1	7,651	se.	44	se.	15	19	6	6	2.7	12.0	....
Winnemucca	4,344	18	56	25.67	30.19	+ .03	25.2 − 3.6	56	3	38	−13	6	12	39	22	18	75	0.59	− 0.4	7	5,186	sw.	38	sw.	18	13	3	15	5.3	7.0	....
Modena	5,479	10	43	24.63	30.15	+ .05	23.9 − 3.6	60	3	37	−14	7	10	46	20	14	71	0.32	− 0.4	3	7,882	w.	41	sw.	15	22	4	5	2.4	3.8	T.
Salt Lake City	4,360	147	189	25.66	30.16	+ .01	26.9 − 1.9	49	15	34	− 2	7	20	23	23	18	67	0.81	− 0.5	8	5,818	se.	38	se.	16	5	10	16	7.0	12.3	T.
Durango	6,546	18	56	23.61	30.15	+ .10	21.7 − 2.8	48	29	36	−13	7	7	39	17	10	65	0.78	− 0.5	6	4,002	nw.	28	nw.	1	16	6	9	4.1	8.6	T.
Grand Junction	4,602	43	51	25.46	30.20	+ .14	15.9 − 8.8	46	30	28	−19	7	3	41	13	8	74	0.62	+ 0.1	8	2,723	nw.	31	s.	16	14	9	8	4.2	9.3	T.
Northern Plateau.							**25.2 − 2.7**												**78**	**1.94 + 0.4**									**7.4**		
Baker	3,471	48	53	26.47	30.18	+ .02	21.3 − 2.6	44	25	30	−10	6	12	28	20	16	75	1.55	+ 0.2	14	5,306	se.	36	sw.	18	8	6	17	6.5	22.4	0.8
Boise	2,739	78	86	27.26	30.21	+ .02	28.0 − 1.3	50	13	35	2	6	21	24	25	21	75	1.34	− 0.6	13	4,828	nw.	32	nw.	3	6	4	21	7.6	12.8	T.
Lewiston	757	40	48	29.27	30.11	− .05	28.9 − 5.6	57	3	37	2	6	21	34	.....	.....	.....	2.33	+ 0.8	15	2,777	ne.	27	s.	20	4	7	20	7.7	23.4	4.8
Pocatello	4,477	46	54	25.49	30.17	− .03	23.3 − 1.8	47	3	31	−13	6	16	30	22	18	78	0.81	+ 0.2	11	8,765	se.	40	sw.	19	3	8	20	7.6	10.0	T.
Spokane	1,929	101	110	27.97	30.09	− .03	24.3 − 2.4	47	2	30	2	19	18	29	24	21	82	3.67	+ 1.4	16	4,048	nw.	33	nw.	3	4	5	22	7.7	35.2	12.1
Walla Walla	1,000	107	115	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Pacific Coast Region.							**37.5 − 1.9**												**89**	**7.33 + 0.7**									**8.2**		
North Head	211	11	56	29.84	30.08	+ .03	40.1 − 1.7	50	2	44	28	5	36	14	39	37	91	9.27	+ 2.6	22	13,307	e.	76	s.	11	4	4	23	8.2	1.3	....
Port Crescent	259	8	53	29.76	30.05	+ .06	34.4 − 1.6	48	25	39	22	5	30	16	.....	.....	.....	5.95	+ 0.4	21	4,294	s.	31	ne.	9	0	10	21	8.5	13.5	....
Seattle	125	215	250	29.96	30.10	+ .05	36.6 − 2.7	49	25	40	22	5	33	12	36	34	90	4.89	+ 0.4	21	7,097	se.	42	s.	20	2	6	23	8.5	11.5	....
Tacoma	213	113	120	29.86	30.10	+ .06	36.1 − 2.0	50	25	40	18	5	32	16	35	33	87	7.44	+ 1.7	18	4,346	sw.	25	n.	4	3	4	24	8.4	23.0	....
Tatoosh Island	86	7	57	29.92	30.02	+ .04	38.7 − 2.3	49	1	42	28	19	35	16	38	37	94	11.74	− 0.4	26	12,765	e.	64	sw.	20	1	9	21	8.0	4.1	....
Portland, Oreg.	153	68	106	29.96	30.12	+ .04	38.2 − 0.9	54	2	43	22	5	34	19	37	35	87	6.25	− 0.2	20	5,935	sw.	29	s.	7	2	4	25	8.5	11.3	....
Roseburg	510	9	57	29.61	30.17	+ .07	38.4 − 2.4	58	24	44	17	6	33	19	37	34	84	5.76	+ 0.1	17	2,004	s.	18	sw.	16	1	16	14	7.0	4.6	....
Middle Pacific Coast Region.							**44.4 − 2.9**												**76**	**4.12 − 0.6**									**4.6**		
Eureka	62	73	89	30.12	30.19	+ .09	42.7 − 4.2	57	31	48	28	6	37	18	41	39	88	8.10	+ 0.5	15	5,973	se.	43	sw.	17	6	13	12	5.9	.....	....
Mount Tamalpais	2,375	11	18	27.63	30.15	+ .04	41.2 − 4.7	61	29	46	22	5	37	19	38	34	77	4.57	− 1.4	11	16,001	ne.	67	nw.	3	18	3	10	3.8	5.7	....
Point Reyes Light	490	7	18	29.59	30.11	.....	46.4 − 3.0	63	2	50	33	5	42	18	.....	.....	.....	2.79	.....	11	15,337	nw.	86	nw.	4	13	6	12	5.0	.....	.....
Red Bluff	332	50	56	29.80	30.17	+ .05	43.6 − 1.8	72	31	52	25	10	36	28	39	31	66	5.00	+ 1.1	11	5,997	nw.	36	n.	5	17	1	13	4.3	8.0	....
Sacramento	69	106	117	30.10	30.17	+ .05	44.2 − 1.4	66	31	52	26	6	36	29	41	38	78	2.52	− 1.2	10	6,918	se.	38	se.	14	19	1	11	4.0	0.1	....
San Francisco	155	200	204	29.99	30.16	+ .05	47.4 − 2.1	68	31	54	33	6	41	20	43	38	72	3.84	− 0.5	10	5,415	ne.	41	ne.	5	14	7	10	4.2	T.	....
San Jose	141	12	110	30.01	30.16	.....	45.2 − 3.1	70	31	55	25	7	36	34	.....	.....	.....	2.29	− 0.6	8	4,020	se.	31	nw.	4	17	3	11	4.1	.....	.....
Southeast Farallon	30	9	17	30.13	30.16	.....	48.4	57	27	51	39	6	46	11	.....	.....	.....	2.51	− 1.8	12	12,875	nw.	66	nw.	4	14	5	12	5.2	.....	.....
South Pacific Coast Region.							**49.0 − 1.9**												**65**	**1.98 − 0.8**									**3.8**		
Fresno	330	62	70	29.81	30.18	+ .08	44.5 − 0.9	67	31	54	17	6	35	27	40	34	69	1.22	− 0.4	6	3,402	e.	36	w.	4	13	7	11	4.6	T.	....
Los Angeles	338	159	191	29.75	30.12	+ .04	52.1 − 1.0	83	3	62	28	7	43	32	44	34	59	2.01	− 0.8	5	4,518	ne.	40	nw.	4	19	5	7	3.4	.....	.....
San Diego	87	94	102	30.03	30.13	+ .06	50.6 − 3.4	78	3	59	25	7	42	27	45	38	68	1.19	− 0.8	5	4,269	nw.	32	w.	4	17	11	3	3.0	.....	.....
San Luis Obispo	201	47	54	29.94	30.17	+ .08	48.6 − 2.4	77	2	59	20	6	38	34	43	35	64	3.48	− 1.2	7	3,950	n.	33	se.	15	16	4	11	4.3	.....	.....
West Indies.																															
San Juan	82	8	54	29.98	30.07	+ .05	74.6	81	25	79	67	13	70	12	.....	.....	.....	4.13	− 0.5	28	13,873	e.	44	e.	6	3	19	9	6.2	.....	.....
Panama.																															
Ancon	92	6	69	29.75	29.84	.....	80.8	93	11	90	67	4	72	23	73	72	87	0.63	− 0.4	8	5,451	nw.	21	n.	29	10	15	6	5.0	.....	.....
Culebra	404	5	62	29.44	29.86	.....	78.7	90	8	87	64	4	71	22	72	71	89	1.57	− 0.2	6	6,142	nw.	26	ne.	8	13	12	6	4.6	.....	.....
Colon	10	5	71	29.86	29.88	.....	80.8	87	7	85	72	31	77	12	75	73	82	6.71	+ 2.7	17	10,034	ne.	30	ne.	22	14	13	4	4.5	.....	.....

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during January, 1913, at all stations furnished with self-registering gages.*

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.												
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Abilene, Tex.	22			0.11														.10			
Albany, N. Y.	8			0.62														.42			
Alpena, Mich.	23			0.49														*			
Amarillo, Tex.	6–7			0.09														*			
Anniston, Ala.	12	D. N. a. m.	D. N. a. m.	0.65	1.30 a. m.	1.42 a. m.	.13	.22	.30	.33											
Asheville, N. C.	27			1.28														.29			
Atlanta, Ga.	24	5.25 a. m.	6.10 p. m.	0.91	2.57 p. m.	3.10 p. m.	.45	.06	.32	.43											
Atlantic City, N. J.	3			0.74														.31			
Augusta, Ga.	20			0.39														.30			
Baker, Oreg.	17–18			0.33														*			
Baltimore, Md.	16			0.56†														*			
Bentonville, Ark.	19–20	11.25 p. m.	7.30 a. m.	1.19	5.02 a. m.	5.31 a. m.	.25	.10	.21	.32	.44	.52	.59								
Binghamton, N. Y.	3			0.53														.14			
Birmingham, Ala.	23	4.45 p. m.	6.03 p. m.	0.79	4.56 p. m.	5.35 p. m.	.04	.10	.12	.15	.21	.33	.50	.68	.74						
Bismarck, N. Dak.	25			0.12														*			
Block Island, R. I.	23			1.12														.44			
Boise, Idaho.	15			0.18														.11			
Boston, Mass.	8			0.87														.15			
Buffalo, N. Y.	11			0.98†														*			
Burlington, Vt.	7–8			0.76														*			
Cairo, Ill.	6			0.43														2.35			
Canton, N. Y.	3–4			1.18														*			
Charles City, Iowa.	22–23			0.12														*			
Charleston, S. C.	2			0.58														.15			
Charlotte, N. C.	27			1.38														.37			
Chattanooga, Tenn.	11–12	8.08 p. m.	3.06 a. m.	1.15	11.25 p. m.	11.51 p. m.	.03	.09	.28	.51	.64	.70	.73								
Cheyenne, Wyo.	4–5			0.30†														*			
Chicago, Ill.	22–23			0.34														*			
Cincinnati, Ohio.	6			0.56														.25			
Cleveland, Ohio.	20			0.66														.28			
Columbia, Mo.	20			0.75														.18			
Columbia, S. C.	24			0.62														.35			
Columbus, Ohio.	23			0.97														.38			
Concord, N. H.	23			0.40														*			
Concordia, Kans.	6–7			0.44														*			
Corpus Christi, Tex.	26			0.57														.20			
Davenport, Iowa.	22–23			0.43														*			
Dayton, Ohio.	20			0.88														.50			
Del Rio, Tex.	26			0.32														.17			
Denver, Colo.	4–5			0.25														*			
Des Moines, Iowa.	22–23			0.41														*			
Detroit, Mich.	20			0.86														.24			
Devils Lake, N. Dak.	27			0.16														*			
Dodge City, Kans.	7			0.21														*			
Dubuque, Iowa.	6–7			0.43														*			
Duluth, Minn.	30–31			0.26														*			
Durango, Colo.	10			0.40														*			
Eastport, Me.	3			1.18														.29			
Elkins, W. Va.	3–4			0.94†														*			
El Paso, Tex.	16			0.22														.10			
Erie, Pa.	17–18			1.13														*			
Escanaba, Mich.	30			0.22														*			
Eureka, Cal.	8			0.85														.34			
Evansville, Ind.	7			1.49														.38			
Flagstaff, Ariz.	9–10			0.41														*			
Fort Smith, Ark.	16			0.83														.54			
Fort Wayne, Ind.	17			1.27														.37			
Fort Worth, Tex.	22			1.34														.33			
Fresno, Cal.	15			0.55														.29			
Galveston, Tex.	26			2.24														*			
Grand Haven, Mich.	22–23			0.52														*			
Grand Junction, Colo.	4–5			0.31														*			
Grand Rapids, Mich.	19–20			0.47														*			
Green Bay, Wis.	7			0.30														*			
Hannibal, Mo.	6–7			0.44†														*			
Harrisburg, Pa.	3			0.93														.37			
Hartford, Conn.	31			0.28														.22			
Hatteras, N. C.	23	12.02 p. m.	6.55 p. m.	0.84	1.11 p. m.	1.24 p. m.	.21	.14	.35	.52											
Havre, Mont.	3			0.61														*			
Helena, Mont.	11–12			0.20														*			
Houghton, Mich.	30–31			0.84														*			
Houston, Tex.	26			1.73														.28			
Huron, S. Dak.	13			0.01														*			
Independence, Cal.	15			0.22														.13			
Indianapolis, Ind.	7			1.58														.43			
Iola, Kans.	16			0.32														.10			
Jacksonville, Fla.	2	7.35 a. m.	D. N. p. m.	1.02	11.22 a. m.	11.59 a. m.	.09	.17	.40	.43	.47	.51	.59	.75	.78						
Kalispell, Mont.	2–3			0.80														*			
Kansas City, Mo.	6–7			0.32														*			
Keokuk, Iowa.	22–23			0.50														*			
Key West, Fla.	27	2.23 p. m.	4.20 p. m.	0.74	2.23 p. m.	2.35 p. m.	.00	.31	.51	.54											
Knoxville, Tenn.	23			0.61														.48			
La Crosse, Wis.	29			0.28														*			
Lander, Wyo.	31			0.36														*			
Lansing, Mich.	20			0.95														*			
La Salle, Ill.	22–23			0.77														*			
Lewiston, Idaho.	3			0.19														.08			
Lexington, Ky.	7			2.39														.63			
Lincoln, Nebr.	6–7			0.17†														*			
Little Rock, Ark.	17	D. N. a. m.	3.00 p. m.	1.69	5.19 a. m.	6.31 a. m.	.08	.21	.29	.32	.35	.39	.41	.47	.53	.59	.65	.80	1.09		
Los Angeles, Cal.	15			0.92														.34			
Louisville, Ky.	10–11			2.51														.55			
Ludington, Mich.	22–23			0.66														*			
Lynchburg, Va.	27			0.68														.11			
Macon, Ga.	24	4.58 p. m.	5.50 p. m.	0.31	4.59 p. m.	5.06 p. m.	.01	.25	.29												
Madison, Wis.	7			0.68														*			
Marquette, Mich.	31			0.64														*			
Memphis, Tenn.	20			0.64														.44			
Meridian, Miss.	7	7.40 p. m.	D. N. p. m.	1.17	8.46 p. m.	9.10 p. m.	.07	.10	.31	.56	.86	.98									

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during January, 1913, at all stations furnished with self-registering gages*—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Miami, Fla.	3	D. N. a. m.	D. N. a. m.	0.53	3.48 a. m.	4.00 a. m.	.02	.14	.36	.44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	18–19	4.25 p. m.	D. N. a. m.	1.86	4.54 p. m.	5.05 p. m.	.16	.16	.41	.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis.	6–7	.....	.....	0.46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Minneapolis, Minn.	29–30	.....	.....	0.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Mobile, Ala.	31	D. N. a. m.	7.55 a. m.	0.80	5.36 a. m.	5.56 a. m.	.04	.10	.23	.41	.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Modena, Utah.	4	.....	.....	0.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Montgomery, Ala.	12	D. N. a. m.	D. N. a. m.	0.68	2.41 a. m.	2.56 a. m.	.01	.29	.39	.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	24	1.15 p. m.	4.10 p. m.	0.56	1.33 p. m.	1.52 p. m.	.02	.05	.17	.32	.44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moorhead, Minn.	29	.....	.....	0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Mount Tamalpais, Cal.	14–15	.....	.....	0.87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.22	.....	.....	.....
Mount Weather, Va.	27	.....	.....	0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Nantucket, Mass.	23	.....	.....	1.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.46	.....	.....	.....
Nashville, Tenn.	6	7.00 a. m.	7.15 p. m.	2.71	9.04 a. m.	9.27 a. m.	.07	.10	.38	.50	.56	.62	.....	.....	.....	.....	.....	.....	.....	.....	.....
	11	4.45 p. m.	11.45 p. m.	2.03	8.10 p. m.	9.04 p. m.	.66	.09	.13	.20	.48	.55	.61	.66	.72	.81	1.12	1.18	.....	.....	.....
New Haven, Conn.	3	.....	.....	0.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.16	.....	.....	.....
New Orleans, La.	11–12	10.20 p. m.	D. N. a. m.	0.95	12.11 a. m.	12.41 a. m.	.01	.18	.44	.54	.59	.64	.70	.....	.....	.....	.....	.....	.....	.....	.....
	18	7.32 a. m.	10.53 a. m.	1.59	7.35 a. m.	8.06 a. m.	.01	.15	.37	.60	.79	.86	.96	1.00	.....	.....	.....	.....	.....	.....	.....
New York, N. Y.	23	.....	.....	0.46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.21	.....	.....	.....
Norfolk, Va.	24	.....	.....	0.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.38	.....	.....	.....
Northfield, Vt.	7–8	.....	.....	0.51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
North Head, Wash.	24	.....	.....	1.69	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.30	.....	.....	.....
North Platte, Nebr.	4–5	.....	.....	0.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Oklahoma, Okla.	10–11	.....	.....	0.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Omaha, Nebr.	6–7	.....	.....	0.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Oswego, N. Y.	3–4	.....	.....	1.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Palestine, Tex.	10–11	.....	.....	1.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Parkersburg, W. Va.	11	.....	.....	2.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.39	.....	.....	.....
Pensacola, Fla.	8	.....	.....	0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....
Peoria, Ill.	22–23	.....	.....	0.62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Philadelphia, Pa.	23	.....	.....	0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....
Phoenix, Ariz.	10	.....	.....	0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.06	.....	.....	.....
Pierre, S. Dak.	3	.....	.....	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Pittsburgh, Pa.	23	.....	.....	0.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.26	.....	.....	.....
Pocatello, Idaho.	8–9	.....	.....	0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Point Reyes Light, Cal.	14	.....	.....	0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.29	.....	.....	.....
Port Huron, Mich.	5	.....	.....	0.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Portland, Me.	3	.....	.....	0.63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.27	.....	.....	.....
Portland, Oreg.	15	.....	.....	0.33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17	.....	.....	.....
Providence, R. I.	8	.....	.....	0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.28	.....	.....	.....
Pueblo, Colo.	4–5	.....	.....	0.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Raleigh, N. C.	27	.....	.....	2.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.57	.....	.....	.....
Rapid City, S. Dak.	3–4	.....	.....	0.24†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Reading, Pa.	3	.....	.....	0.77	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....
Red Bluff, Cal.	18	11.40 a. m.	2.28 p. m.	0.66	1.06 p. m.	1.16 p. m.	.19	.18	.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reno, Nev.	15	.....	.....	0.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Richmond, Va.	7	.....	.....	0.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.31	.....	.....	.....
Rochester, N. Y.	3–4	.....	.....	1.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Roseburg, Oreg.	17	.....	.....	1.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.33	.....	.....	.....
Roswell, N. Mex.	5–6	.....	.....	0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Sacramento, Cal.	15	.....	.....	1.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.37	.....	.....	.....
Saginaw, Mich.	18	.....	.....	0.59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
St. Joseph, Mo.	6–7	.....	.....	0.27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
St. Louis, Mo.	20	.....	.....	1.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
St. Paul, Minn.	29–30	.....	.....	0.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Salt Lake City, Utah.	9–10	.....	.....	0.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
San Antonio, Tex.	26	.....	.....	0.49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.08	.....	.....	.....
San Diego, Cal.	9	.....	.....	0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....
Sand Key, Fla.	27	.....	.....	0.62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.58	.....	.....	.....
Sandusky, Ohio.	10–11	.....	.....	1.03†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
San Francisco, Cal.	8	.....	.....	1.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.62	.....	.....	.....
San Jose, Cal.	15	.....	.....	0.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....
San Luis Obispo, Cal.	15	.....	.....	1.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.31	.....	.....	.....
Santa Fe, N. Mex.	22	.....	.....	0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Sault Ste. Marie, Mich.	2	.....	.....	0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Savannah, Ga.	26	.....	.....	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.23	.....	.....	.....
Scranton, Pa.	7–8	.....	.....	0.64†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Seattle, Wash.	24	.....	.....	0.94	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.14	.....	.....	.....
Sheridan, Wyo.	3–4	.....	.....	0.66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Shreveport, La.	30	.....	.....	0.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.28	.....	.....	.....
Sioux City, Iowa.	3–4	.....	.....	0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Southeast Farallon, Cal.	13	.....	.....	0.66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.29	.....	.....	.....
Spokane, Wash.	11–12	.....	.....	0.86	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Springfield, Ill.	20	.....	.....	1.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Springfield, Mo.	19–20	.....	.....	1.89	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Syracuse, N. Y.	3	.....	.....	1.24†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Tacoma, Wash.	24	.....	.....	1.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17	.....	.....	.....
Tampa, Fla.	27	.....	.....	0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.26	.....	.....	.....
Tatoosh Island, Wash.	24	.....	.....	1.91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.27	.....	.....	.....
Taylor, Tex.	26	.....	.....	1.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.24	.....	.....	.....
Terre Haute, Ind.	20	.....	.....	2.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.77	.....	.....	.....
Thomasville, Ga.	2	.....	.....	0.64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.36	.....	.....	.....
Toledo, Ohio.	20	.....	.....	1.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.34	.....	.....	.....
Tonopah, Nev.	15	.....	.....	0.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Topeka, Kans.	7	.....	.....	0.36†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Valentine, Nebr.	5	.....	.....	0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01	.....	.....	.....
Vicksburg, Miss.	6	1.03 p. m.	3.35 p. m.	2.26	1.16 p. m.	2.04 p. m.	.02	.25	.62	.96	1.02	1.05	1.07	1.21	1.53	1.99	2.08	.....	.....	.....	.....
Walla Walla, Wash.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington, D. C.	23	.....	.....	0.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.28	.....	.....	.....
Wichita, Kans.	6–7	.....	.....	0.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Williston, N. Dak.	25	.....	.....	0.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.04	.....	.....	.....
Wilmington, N. C.	2	.....	.....	0.47	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....
Winnemucca, Nev.	9–10	.....	.....	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Wytheville, Va.	27	.....	.....	1.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.18	.....	.....	.....
Yankton, S. Dak.	4	.....	.....	0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Yellowstone Park, Wyo.	17–18	.....	.....	0.66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....

* Self-register not working. † Record partly estimated. ‡ No precipitation occurred during month.

TABLE III.—*Data furnished by the Canadian Meteorological Service, January, 1913.*

Districts and stations.	Pressure.			Temperature.						Precipitation.		
	Station reduced to 24-hour mean.	Sea level reduced to 24-hour mean.	Departure from normal.	Mean max.+ mean min.÷2.	Departure from normal.	Mean maximum.	Mean minimum.	Highest.	Lowest.	Total.	Departure from normal.	Total snowfall.
St. Johns, N. F.	29.76	29.91	+.05	22.3	− 1.5	30.3	14.3	55	− 2	3.79	−2.12	21.0
Sydney, C. B. I.	29.96	30.00	+.07	26.4	+ 5.9	34.2	18.7	58	3	4.81	−0.29	12.5
Halifax, N. S.	29.96	30.07	+.10	30.2	+ 8.4	39.0	21.4	54	3	6.35	+0.58	6.3
Grand Manan, N. B.												
Yarmouth, N. S.	30.02	30.09	+.09	33.0	+ 6.7	40.8	25.1	54	10	3.92	−1.49	1.2
Charlottetown, P. E. I.	30.00	30.04	+.08	23.2	+ 6.2	29.8	16.7	48	− 2	3.45	−0.51	10.9
Chatham, N. B.	30.01	30.04	+.07	18.2	+ 8.4	27.8	8.7	50	−12	3.38	−0.21	14.7
Father Point, Que.	29.94	29.97	−.01	17.4	+ 9.4	26.4	8.5	46	−12	3.62	+0.77	29.2
Quebec, Que.	29.66	30.00	−.02	16.4	+ 7.3	24.8	8.1	43	−18	3.72	−0.29	17.6
Montreal, Que.	29.80	30.02	−.02	22.2	+10.5	29.2	15.1	46	−11	4.81	+1.08	22.5
Stonecliffe, Ont.	29.34	29.98	−.04	13.8	+ 7.4	23.3	4.4	46	−32	0.80	−1.52	7.4
Ottawa, Ont.	29.75	30.10	+.07	20.0	+10.4	26.6	13.4	43	−14	4.09	+1.10	21.4
Kingston, Ont.	29.71	30.03	−.02	28.5	+11.4	35.3	21.7	44	− 2	4.88	+1.43	15.8
Toronto, Ont.	29.60	30.00	−.05	31.3	+ 9.9	37.8	24.8	52	4	4.36	+1.44	11.5
White River, Ont.	28.56	29.95	−.06	3.4	+ 3.8	18.0	−11.3	40	−39	1.28	−0.41	
Port Stanley, Ont.	29.39	30.05	−.02	29.1	+ 6.9	35.2	23.0	46	2	5.71	+2.72	7.2
Southampton, Ont.	29.27			27.0	+ 6.6	33.3	20.8	50	− 4	3.56	−0.49	15.3
Parry Sound, Ont.	29.27	30.00	−.01	21.4	+ 7.6	29.8	13.1	41	−12	3.76	−0.32	30.5
Port Arthur, Ont.	29.25	30.01	−.06	4.0	+ 0.9	14.0	− 6.0	37	−26	0.54	−0.28	5.1
Winnipeg, Man.	29.18	30.09	−.02	− 6.7	+ 0.1	0.1	−13.5	29	−31	0.75	−0.13	7.5
Minnedosa, Man.	28.10	30.05	−.05	− 8.2	− 1.0	1.5	−17.9	34	−38	0.83	+0.03	8.3
Qu'Appelle, Sask.	27.62	30.03	−.05	− 6.2	− 2.4	3.4	−15.7	40	−44	1.12	+0.62	11.2
Medicine Hat, Alberta.												
Swift Current, Sask.	27.31	30.04	−.05	3.6	+ 0.5	12.9	− 5.8	42	−34	0.48	−0.16	4.8
Calgary, Alberta.												
Banff, Alberta.	25.20	30.05	+.05	6.9	− 5.2	15.5	− 1.7	41	−33	1.21	+0.02	12.1
Edmonton, Alberta.	27.62	30.06	+.03	0.8	− 1.0	8.2	− 6.6	48	−34	2.49	+1.81	24.1
Prince Albert, Sask.	28.39	30.07	−.02	−12.4	− 4.0	− 3.9	−20.9	41	−46	0.80		8.0
Battleford, Sask.												
Kamloops, B. C.	28.72	30.06	+.10	14.2	− 8.8	20.2	8.3	40	−16	1.10	+0.28	11.0
Victoria, B. C.	29.94	30.04	+.07	36.0	− 2.5	40.1	31.8	50	21	4.54	−0.85	4.5
Barkerville, B. C.	25.48	29.95	+.06	8.6	− 9.2	15.2	2.0	35	−37	7.50	+4.90	75.0
Hamilton, Bermuda.	30.16	30.32	+.19	65.0	+ 3.0	70.4	59.7	75	55	2.20	−2.74	

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Climatological Districts of the United States.

Barkerville
Edmonton
Battleford
Prince Albert
The Pas
Calgary
Medicine Hat
Qu'Appelle
Swift Current
Minnedosa
Winnipeg
White River
Cochrane
Fort Arthur
Sault Ste Marie
Stonecliffe
Parry Sound
Montreal
Quebec
Father Point
Sydney
St. John
Portland
Boston
Providence
New York
Philadelphia
Atlantic City
Cape May
Cape Henry
Hatteras
Bermuda
Nassau
Miami
Key West
Havana
Cienfuegos
Santiago de Cuba
Statute Miles
Kilometers

Chart I. Hydrographs of Several Principal Rivers, January, 1913.

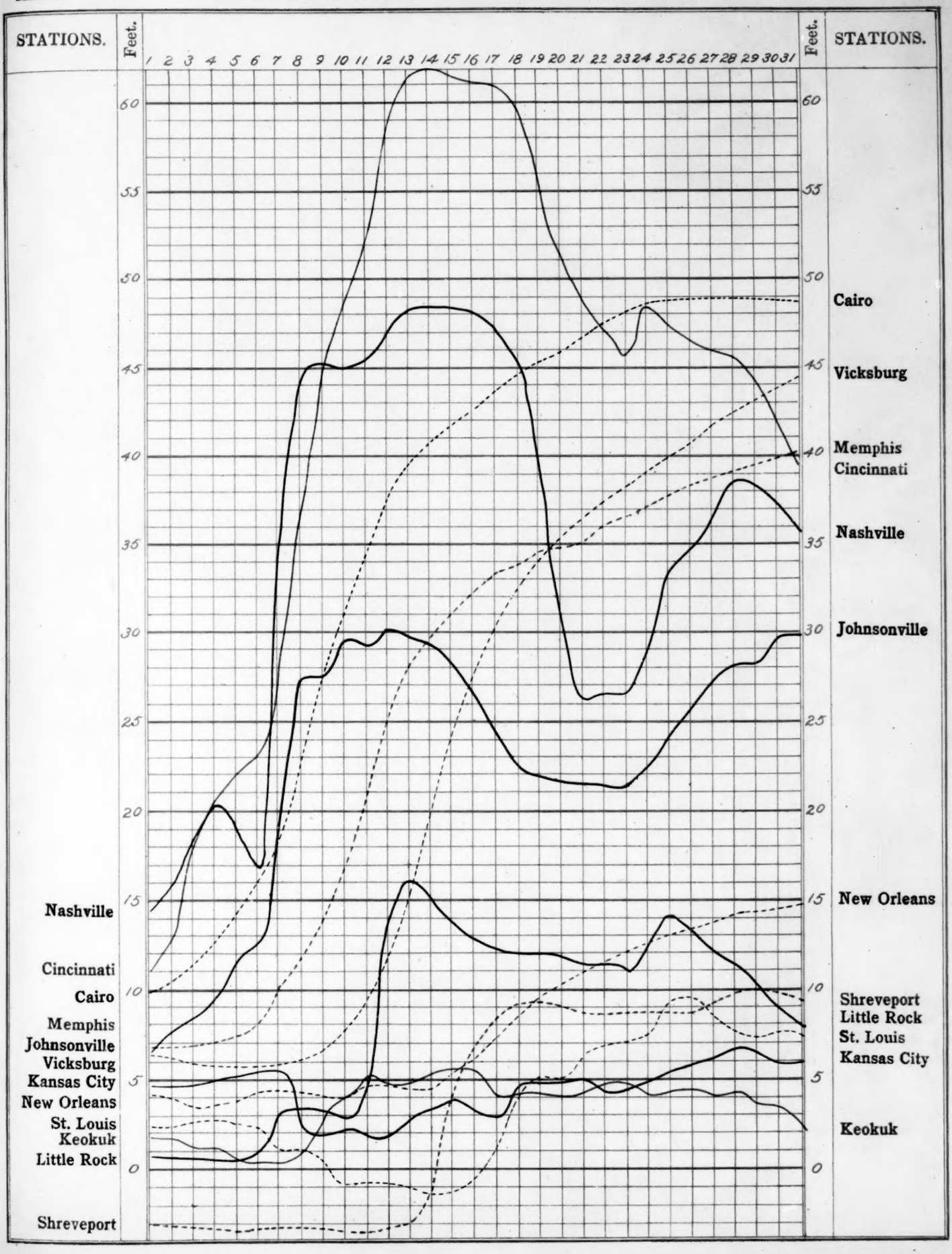


Chart II. Tracks of Centers of High Areas, January, 1913.

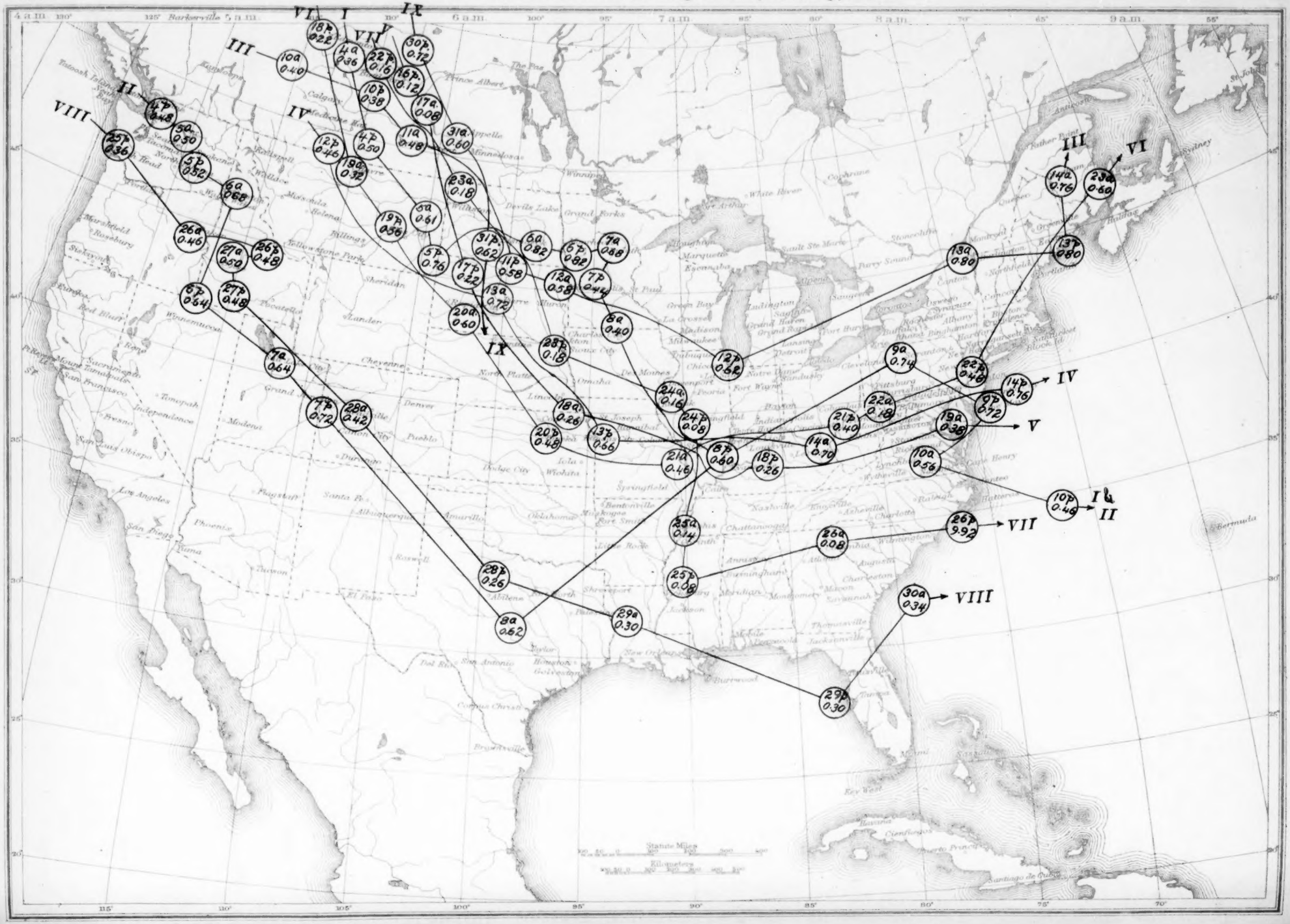
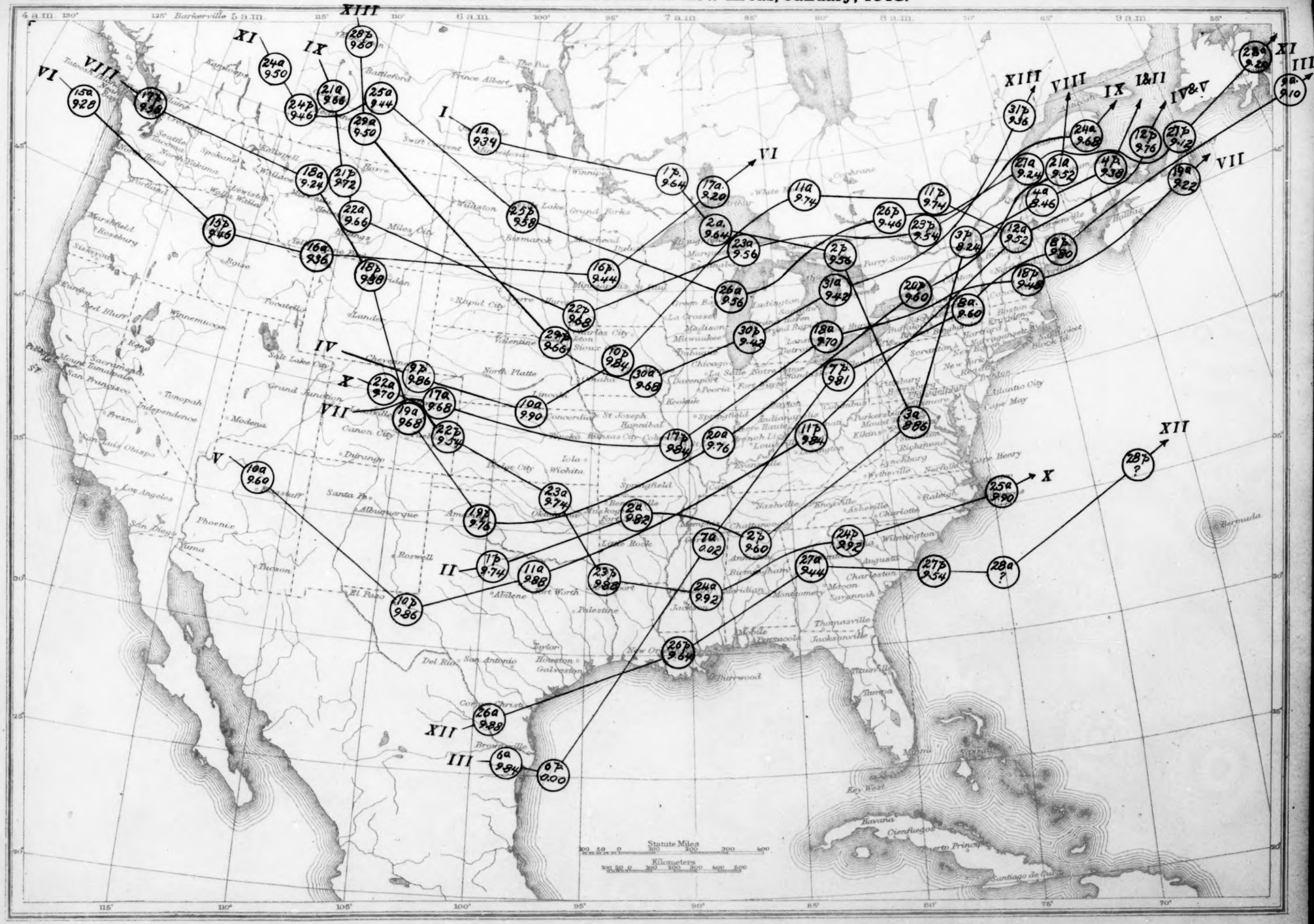


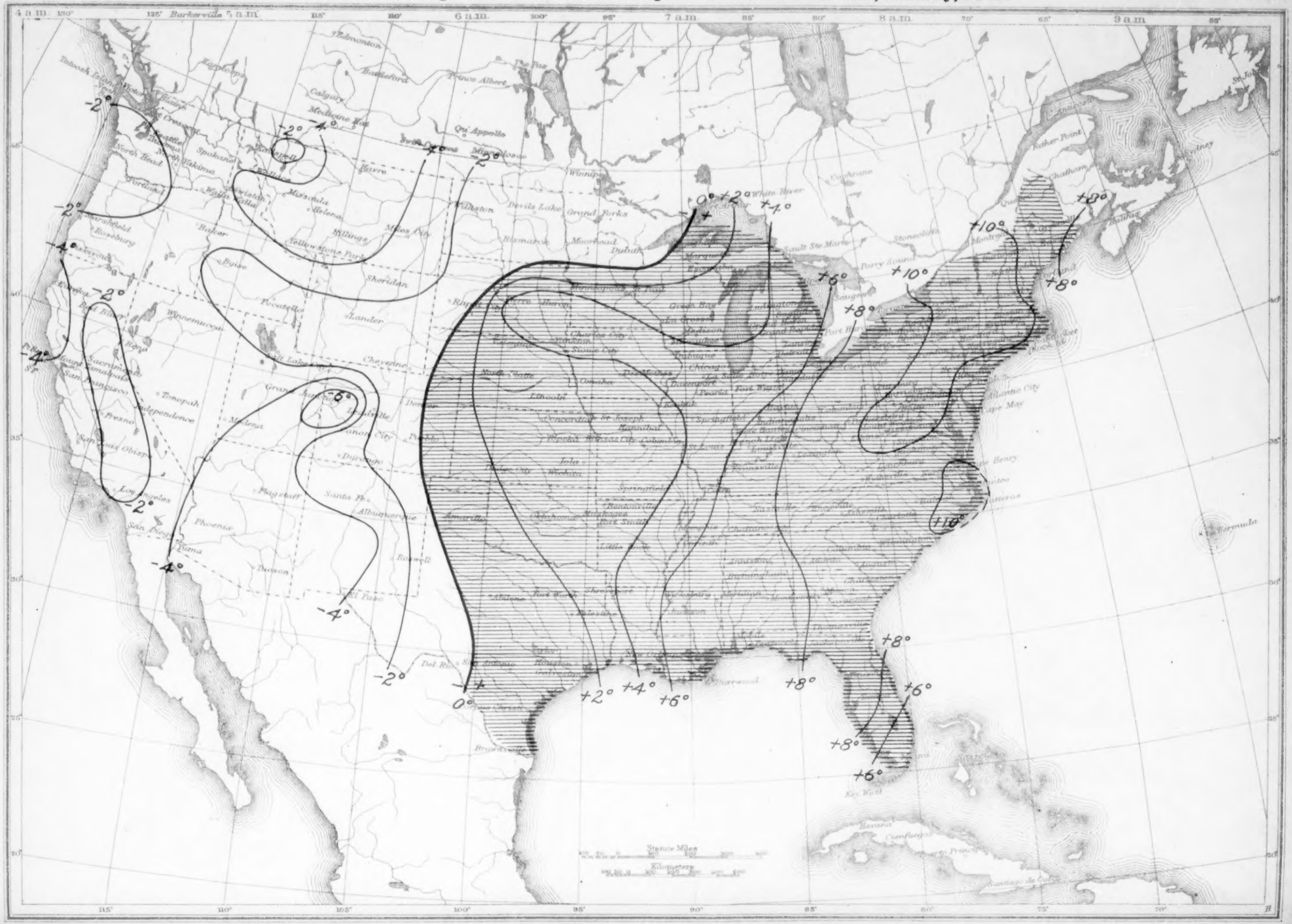
Chart III. Tracks of Centers of Low Areas, January, 1913.

Chart III. Tracks of Centers of Low Areas, January, 1913.



XLI—4.

Chart IV. Departure of the Mean Temperature from the Normal, January, 1913.



XLI—5.

Chart V. Total Precipitation, January, 1913.

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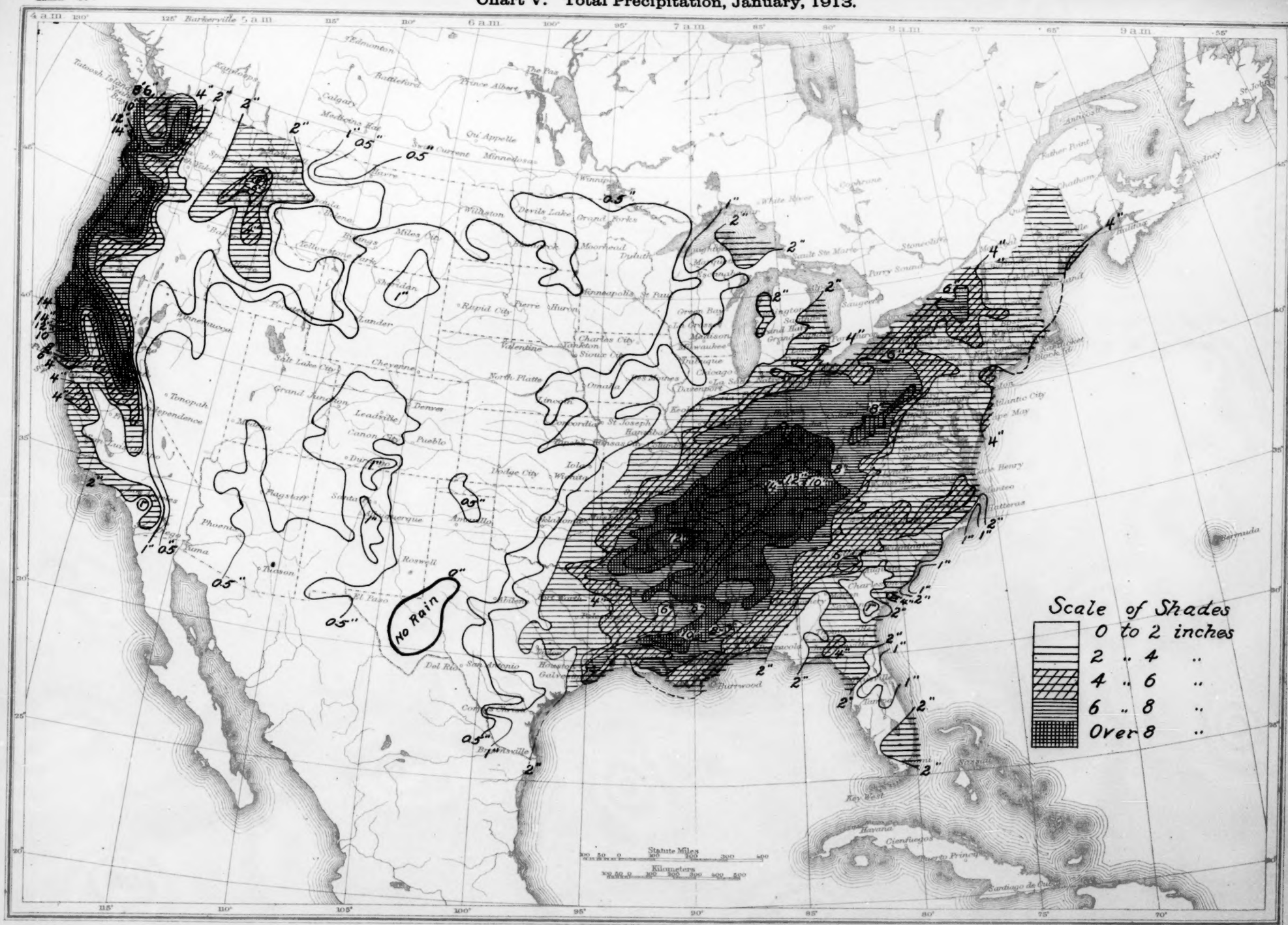
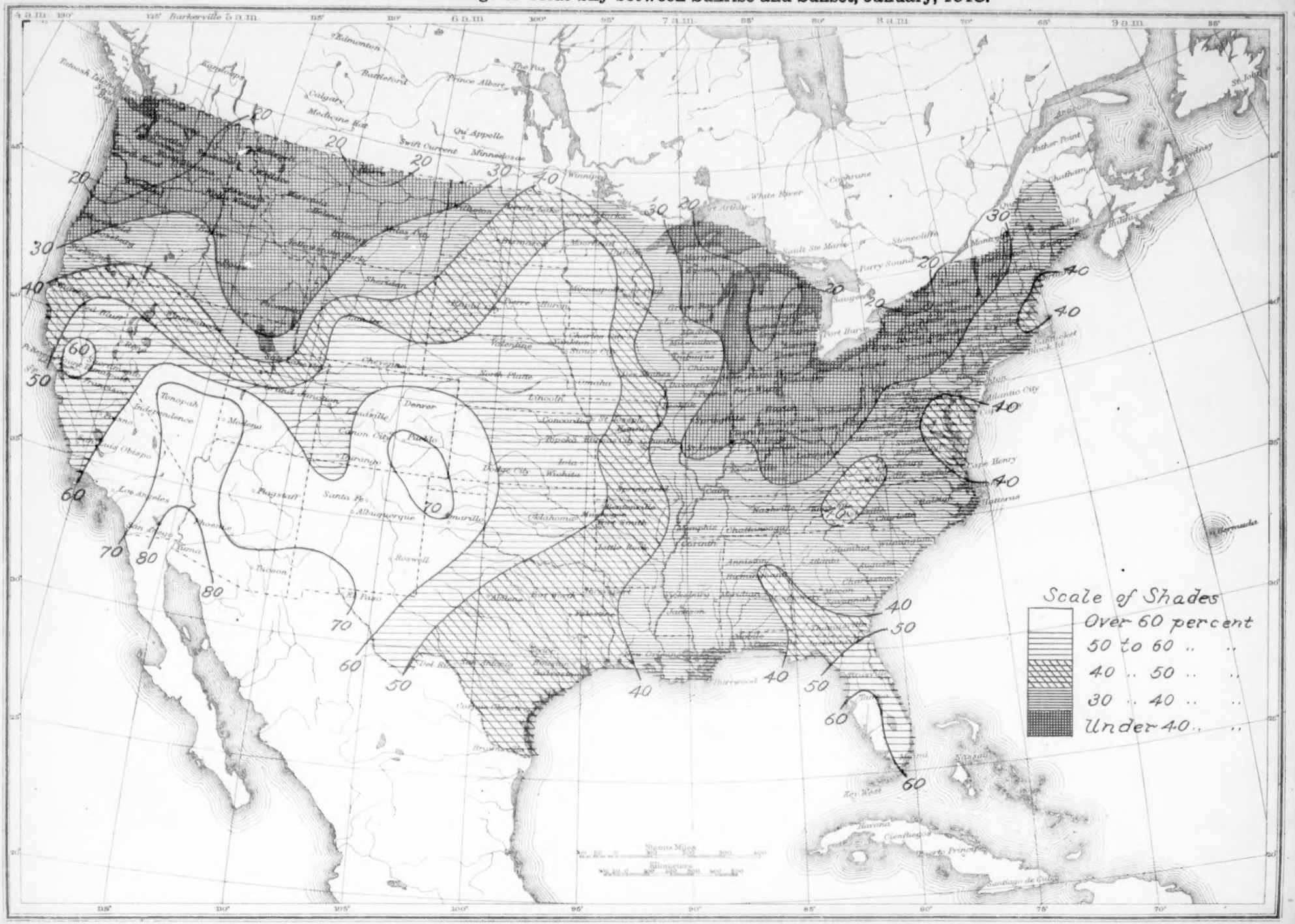


XLI—6.

Chart VI. Percentage of Clear Sky between Sunrise and Sunset, January, 1913.



XLI—7.

Chart VII. Isobars and Isotherms at Sea Level; Prevailing Winds, January, 1913.

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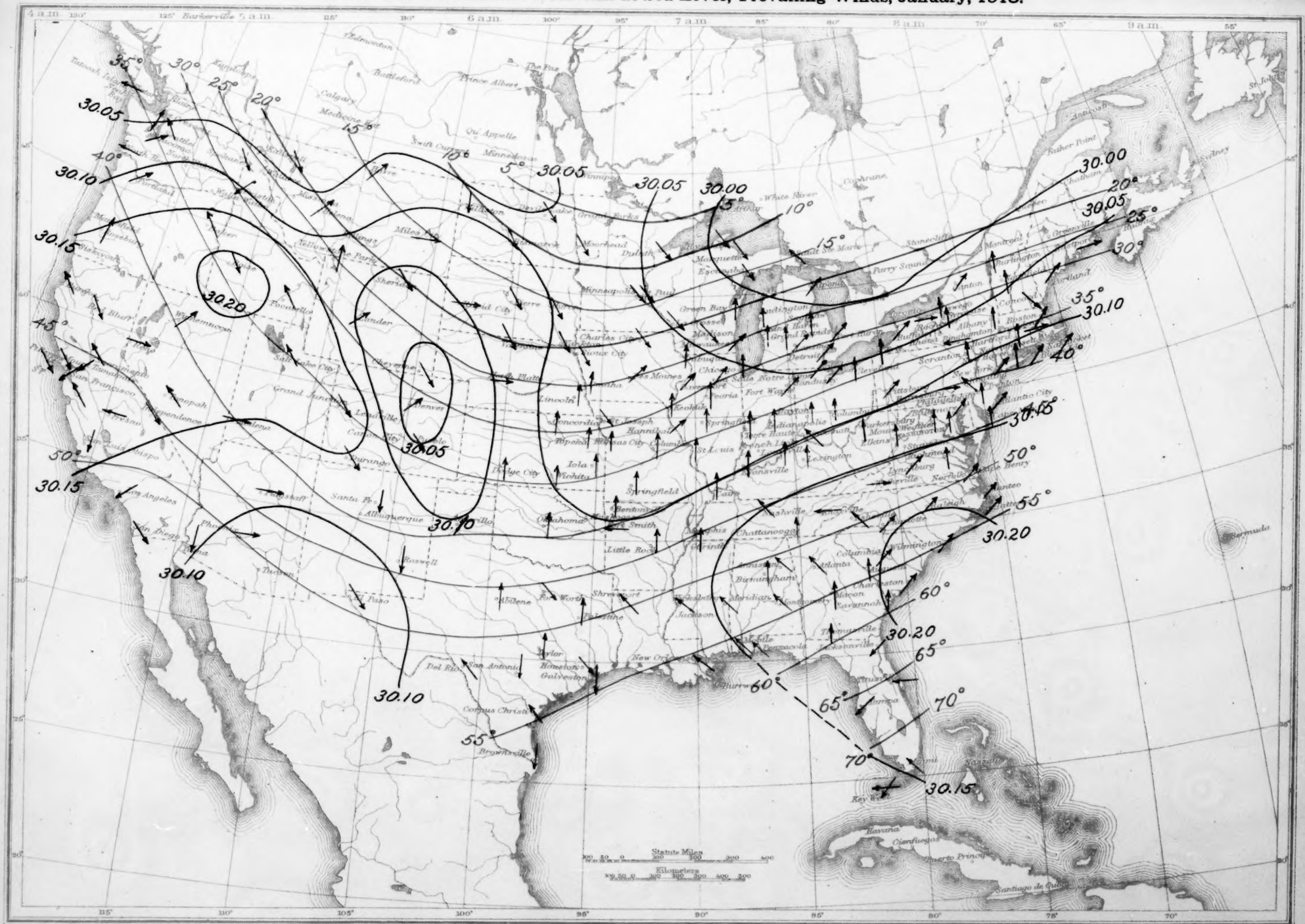

Chart VIII. Total Snowfall for January, 1913.